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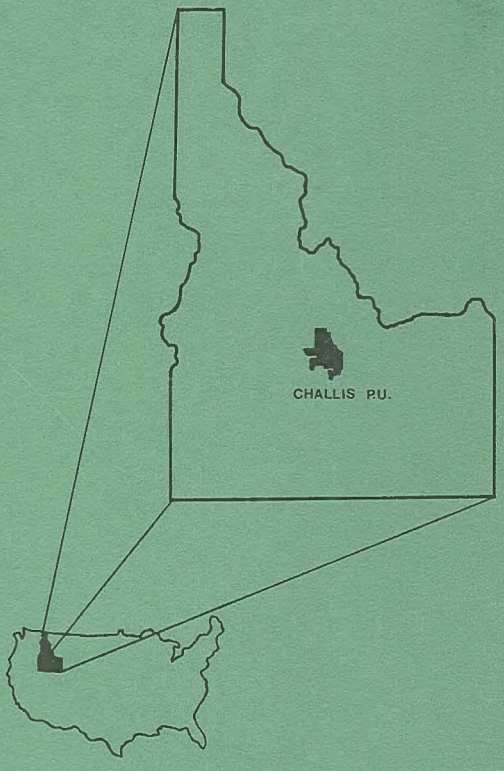

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DEPARTMENT OF THE INTERIOR

FINAL SUPPLEMENTAL
ENVIRONMENTAL STATEMENT

REVISED RANGE MANAGEMENT PROGRAM
FOR THE
CHALLIS GRAZING UNIT

Prepared by

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE

Frank Gregg
Director

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SUMMARY

( ) Draft (X) Final Supplemental Environmental Statement

Department of the Interior
Bureau of Land Management
Idaho State Office

1. Type of Action: (X) Administrative ( ) Legislative

2. Brief Description of Action: The Bureau of Land Management proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in East-central Idaho. The components of the proposed action are: (1) allocation of forage for the grazing ungulates (livestock, horses, and wildlife); and (2) implementing grazing treatments on 330,130 acres of public land consisting of rest-rotation grazing on 227,839 acres, deferred-rotation grazing on 21,495 acres, and seasonal-continuous grazing on 80,788 acres.

3. Summary of Environmental Impacts: Runoff and erosion would decrease as a result of improved watershed conditions; vegetation would improve in quantity and quality; terrestrial wildlife habitat would improve; aquatic and riparian habitat would improve; livestock forage would increase; area income would decrease.

Short-term adverse impacts would include reduced vegetation vigor and reproduction due to spring and summer grazing on seasonal use areas and rest- and deferred-rotation use pastures. Wildlife communities would change as a result of changing ecological conditions. Long-term adverse impacts would include some stream bank deterioration by grazing and trampling.

4. Alternatives Considered:

a. Continuation of present management (no action).
b. Elimination of livestock and wildhorse grazing.
c. Minimum constraints on livestock grazing.
d. Minimum constraints on wildlife.
e. Minimum constraints on wild horses.
f. Reduced levels of grazing by large ungulates.

5. Comments were requested from: See Attachment.

6. Date statement made available to EPA and the public:

Draft: 8/17/78

Final:

ATTACHMENT

Comments on the Draft Supplemental Environmental Statement were requested from the following agencies, interest groups, and individuals. Public hearing were held at the American Legion Memorial Building in Challis, Idaho, on September 6, 1978, and at the Rodeway Inn, Boise, Idaho, on September 7, 1978.

Federal Agencies

- Advisory Council on Historic Preservation
- Department of Agriculture
  - Agricultural Research Service, Pasture and Range Management Research
  - Forest Service
  - Soil Conservation Service
- Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Heritage Conservation and Recreation Service
  - National Park Service
- Department of Transportation
  - Federal Highway Administration
- Environmental Protection Agency
- National Historic Advisory Council

State Agencies

- State of Idaho
  - Governor's Clearinghouse

Local Government

- Custer County Commissioners
- Custer County Planning and Zoning Commission
- Custer County Economic Stabilization Committee
- Mayor of Challis

Other Organizations

- Ada County Fish and Game League
- American Association of University Women
- American Horse Protection Association
- American National Cattlemen's Association

Other Organizations (cont.)

American Sheep Producers Council, Inc.
Boise State University, Dept. of Societal and Urban Studies
Cattle Feeders Assn. and Food Producers Assn.
Council for Agricultural Science and Technology (CAST)
Defenders of Wildlife
Friends of the Earth
Idaho Archaeological Society
Idaho Association of Soil and Water Conservation Districts
Idaho Cattlemen's Association
Idaho Chapter Wildlife Society
Idaho Conservation League
Idaho Environmental Council
Idaho Farm Bureau
Idaho Federation of Women's Clubs
Idaho Mining Association
Idaho Public Land Resource Council
Idaho Range Development Committee
Idaho Resource Development Council
Idaho Wool Growers Association
International Society for Protection of Mustangs and Burros
Lemhi County Cattlemen's Association
Little Lost River Grazing Association
Montana Wildlife Federation
Morgan Creek Cattlemen's Association
National Council of Public Land Users
National Mustang Association
National Wildlife Federation
Nature Conservancy
Natural Resources Defense Council, Inc. (NRDC)
Nevada Cattlemen's Association
Office of the Prosecuting Attorney, Custer County
Oregon Environmental Council
Oregon Soil and Water Conservation Committee
Pacific Legal Foundation
Public Land Council
Salmon Chamber of Commerce
Salmon District Advisory Board
Salmon River Electric Co-op, Inc.
Sierra Club
Society for Range Management
Sport Fishing Institute
The Humane Society of the United States
The Intermountain Company

The National Association of Conservation Districts
The Wildlife Society
Tri-County Cattlemen's Association
Utah Mustang Association
Wilderness Society
Wild Horse Organized Assistance (WHOA)
Wildlife Management Institute

Universities

Boise State University, Dept. of Societal and Urban Studies
Idaho State University, Biology Dept.
Idaho State University, Curatory Archaeology
New Mexico State University, College of Agriculture and Home Economics
University of Idaho, College of Forestry, Wildlife and Range Sciences
University of Idaho, Cooperative Extension Service, Custer Extension Agent
University of Idaho, Cooperative Extension Service, Lemhi Extension Agent
Utah State University, Environment and Man Program

Congressional

Office of Senator Church
Office of Senator McClure
Office of Congressman Symms
Office of Congressman Hanson

Challis Unit Grazing Permittees

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Chapter 1
Description of Proposed Action

BACKGROUND

The Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit was prepared to overcome identified deficiencies in the Final Environmental Statement filed with the Council on Environmental Quality on January 10, 1977. It is a site specific analysis of the environmental impacts of a proposed program for management of rangeland resources on public lands under the jurisdiction of the Bureau of Land Management (BLM). It is prepared in compliance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) 42 U.S.C. § 4321 et. seg.

New information was collected and analyzed during the 1977 field season. In addition to soil and vegetation data, new information on wildlife populations and habitat, anadromous fishery habitat, and wild horse populations was gathered. The new information was used to update and supplement the Challis Unit land use plan (Management Framework Plan) and to provide additional basis for the environmental impact analysis.

The proposed action and alternatives were developed through the land use planning process (activity and multiple-use recommendations from the Management Framework Plan). The major thrust of the proposal is the allocation of forage for use by livestock, wild horses, and wildlife (deer, elk, antelope, and bighorn sheep), just one part of the Bureau's overall range management program.

The proposal does not describe specific allotment management plans (AMP's) for each allotment grazed by livestock as was done in the original environmental statement. Instead this supplemental environmental statement analyses impacts of the proposed allocation of forage, broad management proposals and supporting range improvement projects.

The original Final Environmental Statement on the Challis Unit Grazing Program is available for review at the District Office, the Idaho State Office, and the Washington Office of BLM. Portions of the original document referred to in this supplement will be made available upon request to the Idaho State Office.

The Challis Planning Unit encompasses 352,182 acres of which 330,122 acres are public lands, 180,046 acres are State, and 4,014 acres are in private ownership (Table 1-1 and Map 1-1).

TABLE 1-1
CHALLIS UNIT ACREAGE BY OWNERSHIP AND ALLOTMENT

Allotment	Public Land	State	Private	Total
Red Lake	23,195	1,346		24,541
Herd Creek	22,050	2,020		24,070
Road Creek	15,565	1,127		16,692
Bruno Creek	2,378			2,378
Round Valley	13,503			13,503
San Felipe	81,316	4,759	1,208	87,355
Warm Springs	59,703	3,018	80	62,801
Garden Creek	30,458	880	213	31,551
Bald Mountain	22,597	604	1,009	24,246
Thompson Creek	5,595		239	5,834
Split Hoof	8,415	848		9,263
Squaw Creek	7,044	477	765	8,286
Spud Creek	8,856	240		9,096
Pine Creek	5,026			5,026
East Fork	11,715	1,500		13,215
Sullivan Creek	3,570	400	300	4,270
Malm Gulch	9,136	791	128	10,055
	330,122	18,046	4,014	352,182

Land status is shown on Map 1-1.

PROPOSAL OVERVIEW

Idaho's BLM Salmon District Office proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in east central Idaho. The proposed levels of grazing use are shown in Table 1-2. Numbers of permittees and allotments are shown in Table 1-3.

TABLE 1-2

SUMMARY OF THE PROPOSED ACTION AND
THE EXISTING SITUATION 1/

Grazing Animals	Present Use AUMs 2/	Proposed Use AUMs
Cattle	17,444	10,436
Wild Horses	8,790	2,430
Grazing Wildlife	6,758 3/	7,772 4/
TOTAL	32,992	20,638 5/

1/ See Table 1-7 for the allocation of forage by allotment.
2/ Livestock use is the 8-year average.
3/ Present forage use (Big Game).
4/ Forage demand for Idaho Department of Fish and Game population objectives (Big Game).
5/ Allocation procedure is explained in Appendix 2-A.

TABLE 1-3
COMPARISON OF NUMBER OF ALLOTMENTS AND LIVESTOCK OPERATIONS
(EXISTING SITUATION AND PROPOSED ACTION)

	Number of Allotments	Number of Permittees
Proposed Action	17	38
Existing Situation	13	38

Proposed grazing systems for management of forage resources are summarized in Table 1-4.

TABLE 1-4
SUMMARY OF GRAZING MANAGEMENT PROPOSED

Proposed Action Component	Total BLM Acres by Allotment	Proposed Level of Livestock Grazing (AUM's)
Eliminate Livestock Use	21,122	0
Decrease Level of Use and Graze Seasonally (7 Allotments)	67,162	1,866
Decrease Level of Use and Graze Under a Deferred-Rotation System	21,198	386
Decrease Level of Use and Graze Under a Rest-Rotation System	220,640	8,184
Totals	330,122	10,436

Components of the proposed action are further described in the proposed action section of this Chapter.

The range management program that is finally selected will be implemented over a period of five years after land use planning decisions have been completed. In conformance with the final program, levels and periods of livestock use will be established with the livestock operators. Grazing management systems will be incorporated into allotment management plans (AMP's) developed in cooperation with the livestock operators and agencies administering adjoining lands.

EVOLUTION OF THE PROPOSAL

The specific proposals for the Challis Planning Unit were developed through the Bureau of Land Management land use planning system (Management Framework Plan -- MFP). (See Appendix 1 for a description of the components and steps in the system). The proposed action reflects the multiple use recommendations (MFP Step 2) as they pertain to allocation and management of available forage for grazing animals, taking into consideration the needs for protection, maintenance, and improvement of the vegetation and soil resources.

Table 1-5 shows the individual activity recommendations developed in the first step of the MFP as they affect grazing animals. Conflicting activity recommendations are shown in column two. The multiple use recommendations resolved in the second step of the MFP form the basis for the proposed actions are shown in column three. Columns three and four present part of the rationale used in selecting the multiple use recommendations and the major resource values given up or reduced in order to resolve the conflicts between activity recommendations.

At the time the MFP recommendations were made, wilderness criteria and guidelines were not established and wilderness inventories had not been done on the public lands that would be impacted by this proposal. Prior to implementation of any actions, the areas will have to be inventoried and impacts on potential or existing wilderness areas assessed. Until Congress acts on an area that has been designated for wilderness study, existing multiple use activities, including grazing and supporting activities will continue under current management techniques. New uses or expanded existing uses may be allowed if the impacts will not impair the suitability of the area for wilderness.

TABLE 1-5
DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RATIONALE	RESOURCE TRADE OFFS
Livestock Grazing 1. Graze the proposed allotments at the maximum livestock carrying capacity of 12,540 AUMs.	Maintain 340 wild horses. Provide forage for the big game species. Protect watersheds by not grazing more than 50% of the current year's forage production. Protect anadromous fish habitat. Provide 4,470 acres of land for urban growth, industrial and agricultural development.	1. Allow 10,436 AUMs for livestock grazing.	1. Provide forage for an average of 162 wild horses. 2. Provide forage for wildlife in areas also used by livestock. 3. Forage allocation was determined on the basis of range suitability and plant needs.	2,104 AUMs of forage not available to livestock grazing.
2. Continue the present grazing system on the Herd Creek Allotment; implement grazing systems on 9 allotments; continue seasonal grazing on 7 allotments; no grazing by livestock in the Malm Gulch Allotment. See Table 1-6.	1. Do not allow livestock or wild horses to graze lands with a high soil erosion hazard and poor range condition (77,363 acres). 2. Improve 16 miles of anadromous fish habitat in the Herd Creek watershed from fair/good to excellent by eliminating livestock grazing in critical riparian areas.	2. Continue the present grazing system on the Herd Creek Allotment; implement grazing systems on 8 allotments; continue seasonal grazing on 7 allotments; no livestock grazing on the Malm Gulch Allotment (9,136 acres) and also no grazing on the Sand Hollow Watershed (3,905 acres Road Creek Allotment).	1. Continued use of the Herd Creek AMP (which is a joint USFS-BLM plan) for at least one more grazing cycle is necessary to fully evaluate the future course of action for this allotment. 2. Malm Gulch was designated as a Frail Lands Area in 1964 and livestock grazing was eliminated. This area plus the Sand Hollow Watershed are highly erosive and very susceptible to flooding. 3. Only 9 allotments (see Table 1-6) lend themselves to any grazing systems as the other 7 are strictly early spring grazing on steep slopes prior to entering US FS permits.	1. Allow grazing on 55,186 acres of high soil erosion hazard and poor condition lands by wild horses and/or livestock. 2. Loss of 77 AUMs of forage in Herd Creek riparian areas. 3. Do not fence 12.75 miles of anadromous fish habitat on the Herd Creek Watershed. 4. Loss of 36 AUMs of forage for livestock and wild horses in the Road Creek Allotment
Wild Horses 1. Maintain 340 wild horses within the area traditionally used in 1971. This amounts to 4,080,000 lbs. of forage required.	1. Conflicts with livestock recommendation of 39 head of wild horses. 2. Provide forage for big game species. 3. Provide high quality habitat for non-big game species. 4. Protect watersheds - Malm Gulch	Maintain from 100 to 202 wild horses with an average of 162 head within the traditional wild horse area minus Malm Gulch and the Sand Hollow Watershed. This amounts to 1,944,000 lbs. of forage required.	1. Public opinion throughout the MFP process favored maintaining approximately 150 horses. 2. 162 horses would maintain a viable population relatively free of in-breeding, disease and winter starvation. 3. This 162 figure is approximately the number of wild horses found in the Challis Unit at the passage of the Wild Horse and Burro Act of 1971. 4. The horses represent no economic value at all and only token visitor use value.	1. Loss of 1,034 AUMs of livestock forage which will be used by the 162 wild horses. 2. Loss of 178 wild horses.

TABLE 1-5
DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS (Continued)

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RATIONALE	RESOURCE TRADE OFFS
2. Eliminate domestic livestock grazing on critical wild horse wintering areas (30,789 acres).	1. Conflicts with livestock grazing on portions of each of the 5 affected allotments in the wild horse area. 2. Watershed and soil loss protection. 3. Provide high quality habitat for non-big game species. 4. Provide forage for wildlife on areas utilized by both horses and wildlife.	Rejected this recommendation completely.	1. Wild horse numbers will be reduced to the carrying capacity of the wintering areas. 2. These critical wild horse wintering areas would have to be fenced at a very high cost and the fencing would be very detrimental to wildlife movement and aesthetics. 3. All segments of the public are opposed to this recommendation. 4. Loss of livestock grazing AUMs would significantly impact the licensees involved.	Loss of AUMs for wild horses.
3. Eliminate fences on the entire wild horse range and do not construct any new fences.	1. Implement grazing systems on 9 allotments and disallow wild horse and livestock grazing on Malm Gulch Allotment. 2. Develop range-facilitating projects to facilitate grazing systems. 3. Fence 24 miles (both sides) of unstable stream banks from livestock and wild horse grazing to protect watershed values.	Rejected recommendation completely.	1. Effective livestock management would be eliminated. 2. Erosion problems and vegetative damage would result in some areas. 3. Past experience has shown that existing fences have not been detrimental to horse movement or wildlife. 4. Considerable loss of past fence development investment would occur.	1. Wild horse movement would be altered to some degree. 2. Wild life (antelope, mule deer, and a few elk) movement would be inhibited to some degree. 3. Scenic/aesthetic qualities of the area would be lessened to a slight degree.
Wildlife (Terrestrial) 1. Provide 8,726 AUMs of forage for the following big game species: a. 394 elk - 774 AUMs. b. 5,663 mule deer - 6,249 AUMs. c. 1,160 antelope (winter) - 392 AUMs. d. 906 antelope (Spring, Summer, Fall) - 426 AUMs. e. 850 bighorn sheep - 885 AUMs.	1. Graze 12,540 AUMs by livestock. 2. Maintain 340 wild horses.	1. Provide 7,772 AUMs of forage for the following big game species: a. 317 elk - 561 AUMs. b. 5,624 deer - 6,166 AUMs. c. 1,160 antelope (winter) - 392 AUMs. d. 906 antelope (Spring, Summer, Fall) - 426 AUMs. e. 220 bighorn sheep - 227 AUMs.	1. In order to meet the stocking rate determined feasible for range recovery wildlife numbers were reduced in those areas (mainly early green up bottom lands) where competition with livestock for forage occurs. 2. The Idaho Fish & Game's 15-year goals especially for bighorn sheep were based on reintroductions into historical use areas. Introducing large numbers of sheep in historical areas would have detrimental effects on the other species of big game present. Also, there is not enough forage available to handle the additional numbers.	Forage will not be provided for the following big game species: 1. 77 elk 2. 39 mule deer 3. 630 bighorn sheep

TABLE 1-5
DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS (Continued)

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RATIONALE	RESOURCE TRADE OFFS
2. Exclude livestock and wild horse grazing on 2,291 acres of critical elk winter habitat and 15,991 acres of bighorn sheep habitat.	1. Graze 12,540 AUMs by livestock. 2. Maintain wild horse herd at 340 animals. 3. Eliminate fences on the entire wild horse range and do not construct new fences.	1. Exclude livestock and wild horse grazing on 2,291 acres of critical elk winter habitat and 5,790 acres of critical bighorn sheep habitat.	Livestock and/or wild horses compete directly with elk and/or bighorn sheep for forage. Due to the very limited wintering ranges of the elk and bighorn sheep, livestock and wild horse use will be eliminated from the elk wintering area near Willow Creek Summit and livestock use will be eliminated on 5,790 acres of big horn sheep wintering habitat in the East Fork, Road Creek, Spud Creek, and Garden Creek Allotments. The maintenance of the wildlife resources in these areas is more important from a multiple-use standpoint than the livestock AUMs involved. Most of the area(s) involved are unsuitable to livestock grazing anyhow.	Livestock use will be allowed to graze on 10,201 acres of critical bighorn sheep winter range. This amounts to approximately 50 AUMs of potential bighorn forage.
3. Fence 24 miles (both sides) of important anadromous streams from livestock and wild horse use.	1. Provide livestock 12,540 AUMs of forage. 2. Maintain 340 wild horses. 3. Eliminate fences on the entire wild horse range and do not construct any new fences.	Fence 3.25 miles (both sides) of important anadromous habitat on Herd Creek and Lake Creek.	Riparian habitat degraded by livestock concentration must be improved under Section 102 of the Federal Land Policy and Management Act of 1976. Fencing of 3.25 miles (experimentally) will be done to determine the effectiveness of such a project.	Approximately 20.75 miles of stream will continue to receive heavy livestock and/or wild horse use, but the use will be considerably less than present and under some type of grazing system at least for the livestock.
4. Eliminate livestock and wild horse grazing from 20,352 acres in Horse Basin and Corral Basin watersheds.	1. Provide livestock 12,540 AUMs of forage. 2. Maintain 340 wild horses. 3. Eliminate fences on the entire wild horse range and do not construct new ones. 4. Would inhibit wildlife movement, especially antelope.	Rejected the MFP 1 recommendation completely.	1. Improvement of the 20,352 acres would required implementation of a grazing system or vegetative manipulation in a realistic time frame. 2. Benefits from the recommendation would not warrant the capital investment necessary (33 miles of fence).	Continued siltation and watershed damage would occur although it would be buffered by a grazing system and some vegetative manipulations.

PROPOSED ACTION

Purpose

The purpose of the proposed action is to manage use of rangeland for protection, maintenance and improved condition of the basic vegetation and soil resources, as required by the Taylor Grazing Act, 1934, and the Federal Land Management and Policy Act, Public Law 94-579, enacted 1976.

Objectives

The proposed action is designed to:

1. Supply 3,722 cattle 10,436 AUMs of primarily spring grazing in the Challis Unit.

2. Furnish year-long forage for an average number of 162 wild horses in the Red Lake, Road Creek, San Felipe/Peck Canyon, Warm Springs and Split Hoof Allotments (2,430 AUMs).

3. Furnish forage for big game species in the Challis Unit:

317 Elk During the Winter and Spring	561 AUMs
5,624 Mule Deer During the Winter and Spring	6,166 AUMs
1,160 Antelope in the Winter and 906 Antelope in the Spring, Summer and Fall	818 AUMs
220 Bighorn Sheep During the Winter and Spring	227 AUMs

4. Eliminate livestock and wild horse grazing on 21,122 acres for the protection of highly erodable soils and critical bighorn sheep habitat and elk habitat.

5. Protect 3.25 miles of anadromous fish habitat by fencing to protect stream banks from livestock and wild horse grazing and trampling.

6. By 1984, increase forage production by approximately 1,000 AUMs for livestock from vegetation manipulation projects.

7. By 1994, increase total livestock forage production to 17,500 AUMs. The 15 year time frame of the proposed action would allow the most complex livestock grazing system at least two full cycles. This would be a minimum time frame to reach planning objectives.

Components of the Proposed Action

Allocation of Available Forage and Grazing Treatments. At least 50 percent of all forage production (by weight) would be reserved for plant maintenance, soil protection and stabilization, and

non-consumptive habitat. All unpalatable vegetation would also serve to protect the soil resource and provide wildlife habitat cover.

For protection of the highly erodible soils in the Malm Gulch Allotment (9,136 acres) and Sand Hollow watershed (3,905 acres), all vegetation will be protected from livestock and wild horse grazing. Five thousand seven hundred ninety (5,790) acres of critical bighorn sheep winter habitat (3,908 acres in the East Fork Allotment, 585 acres in the Road Creek Allotment, 297 acres in the Spud Creek Allotment, and 1,000 acres in the Garden Creek Allotment) would be protected from livestock grazing by fencing and 2,291 acres of critical winter elk habitat in the San Felipe/Peck Canyon Allotment would be protected from livestock grazing by not developing water.

To exclude livestock grazing, 3.25 miles of riparian habitat (4 acres) on Herd Creek and Lake Creek would be fenced. The remainder of forage production is available to grazing ungulates and is allocated in Table 1-7.

Wild horse numbers would be controlled at an average level of 162 head. They would fluctuate between 100 and 200 necessitating a gathering program every four years.

Table 1-6 identifies proposed grazing treatments in each allotment.

TABLE 1-6
SUMMARY OF PROPOSED LIVESTOCK GRAZING MANAGEMENT TREATMENTS 1/

MANAGEMENT TREATMENT	ALLOTMENTS	TOTAL AUMs	ACRES OF FEDERAL LAND IN ALLOTMENT
Rest Rotation - 5 Pasture	Warm Springs	2,201	59,703
Rest Rotation - 4 Pasture	Garden Creek	600	29,458
Rest Rotation - 3 Pasture	Herd Creek	1,411	22,050
	San Felipe/Peck Canyon	3,484	79,025
	Bald Mountain	296	22,597
	East Fork	192	7,807
		5,383	131,479
Deferred Rotation - 2 Pasture	Squaw Creek	133	7,044
	Spud Creek	202	8,559
		335	15,603
Deferred Rotation - 3 Pasture	Thompson Creek	51	5,595
Seasonal (Spring)	Red Lake	613	23,195
	Road Creek	346	11,075
	Round Valley	438	13,503
	Split Hoof	118	8,415
	Sullivan Creek	85	3,570
		1,600	59,758
Seasonal (Spring, Summer & Fall)	Bruno Creek	85	2,378
Seasonal (Spring & Fall)	Pine Creek	181	5,026
No Grazing by Livestock			21,122
TOTAL		10,436	330,122

1/ These grazing management treatments are shown by allotment on Map 1-2.

TABLE 1-7

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS BY ALLOTMENT

Allotments Grouped By Grazing System	LIVESTOCK			WILD HORSES			ELK		
	Numbers	Season of Use	AUMs 2/	Numbers	Season of Use	AUMs 2/	Numbers	Season of Use	AUMs 2/
Rest Rotation - 4 Treatments									
Warm Springs	755	5/1 - 12/15	2,201	90	Yearlong	1,350			
Subtotal	755		2,201	90		1,350			
Rest Rotation - 3 Treatments									
Herd Creek 1/	666	6/16 - 10/31	1,411				20	W, Sp	38
San Felipe	630	5/1 - 9/29	3,484	24	Yearlong	360	140	W, Sp	271
Garden Creek	300	5/1 - 6/30	600				40	W, Sp	25
Bald Mountain	148	5/1 - 6/30	296				10	W, Sp	19
East Fork	96	5/1 - 6/30	192				5	W, Sp	10
Subtotal	1,840		5,983	24		360	215		363
Deferred Grazing									
Spud Creek	101	5/1 - 6/30	202				5	W, Sp	10
Squaw Creek	67	5/1 - 6/30	133				36	W, Sp	70
Thompson Creek	10	5/16 - 10/15	51				38	W, Sp	73
Subtotal	178		386				79		153
Seasonal Grazing									
Red Lake	307	5/1 - 6/30	613	22	Yearlong	330			
Road Creek	173	5/1 - 6/30	346	18	Yearlong	270	2	W, Sp	4
Bruno Creek	19	5/16 - 9/30	85				16	W, Sp	31
Round Valley	219	5/1 - 6/30	438						
Split Hoof	59	5/1 - 6/30 5/16 - 6/10	118	8	Yearlong	120			
Pine Creek	129	10/1 - 10/16	181						
Sullivan Creek	43	5/1 - 6/30	85				5	W, Sp	10
Subtotal	949		1,866	48		720	23		45
GRAND TOTAL	3,722		10,436	162		2,430	317		561

TABLE 1-7 (cont.)

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS BY ALLOTMENT

Allotments Grouped By Grazing System	DEER			ANTELOPE			BIGHORN SHEEP		
	Numbers	Season of Use	AUMs 2/	Numbers	Season of Use	AUMs 2/	Numbers	Season of Use	AUMs 2/
Rest Rotation - 4 Treatments									
Warm Springs	200	W, Sp	221	210	Winter	219			
				315	Sp, S, F				
Subtotal	200		221	525		219			
Rest Rotation - 3 Treatments									
Herd Creek	500	W, Sp	552	20		9			
San Felipe	175	W, Sp, S	239	570	Winter	349			
				333	Sp, S, F				
Garden Creek	1,025	W, Sp	1,130	40	Yearlong	33	80	W, Sp	83
Bald Mountain	1,000	W, Sp	1,102						
East Fork	300	W, Sp	330				85	W, Sp	88
Subtotal	3,000		3,353	963		391	165		171
Deferred Grazing									
Spud Creek	290	W, Sp	319	120	Winter	47	25	W, Sp	25
				15	Sp, S, F				
Squaw Creek	284	W, Sp	316						
Thompson Creek	250	W, Sp	276						
Subtotal	824		911	135		47	25		25
Seasonal Grazing									
Red Lake	450	W, Sp	496	70	Winter	38			
				30	Sp, S, F				
Road Creek	425	W, Sp	469	65	Sp, S, F	31	30	W, Sp	31
Bruno Creek	125	W, Sp	54						
Round Valley	50	W, Sp	55	150	Winter	78			
				58	Sp, S, F				
Split Hoof	200	W, Sp	221	30	Sp, S, F	14			
Pine Creek	200	W, Sp	221						
Sullivan Creek	150	W, Sp	165		Sp, S, F	9			
Subtotal	1,600		1,681	403		156	30		31
GRAND TOTAL	5,624		6,166	1,160	Winter	813	220		227
				906	Sp, S, F				

1/ The Herd Creek Grazing System includes two allotments on the National Forest.
2/ AUMs on public land.

NOTE: Of the total allocation of forage to wildlife (big game), only 337 AUMs are forage livestock could utilize. The remaining forage allocated to big game is in areas unsuitable for livestock grazing.

Description of Grazing Systems. The following statement by Stoddard, Smith, and Box (1975) reflect the thoughts of many range management specialists:

"The first consideration in planning range use is to ensure that the basic plant and soil resources are used in such a way that they continue to be productive under the grazing system employed.

"The selection of a particular system will depend upon the kind of vegetation, the physiography of the range, the kind of animals, and the management objectives of the operator.

"Continuous grazing wherein livestock are placed on the range and allowed to remain yearlong or throughout the grazing season has been shown to result in undesirable successional changes in range forage. To prevent this, specialized systems of grazing management have been used widely. Although differing greatly in details, they have two features in common, a period of rest to allow forage plants to grow unmolested and a systematic grazing schedule among different parts of the range.

"The objectives sought are (1) restoring vigor to forage plants, (2) allowing plants to produce seed, (3) attaining heavier and more uniform utilization, and (4) increasing animal production."

Studies of grazing systems conducted by Johnson (1965), Ratliff and Reppert (1974), and Hormay (1970) support the anticipated results of proper rest and systematic grazing.

Stoddart, Smith, and Box (1975) concluded, "Despite their disadvantages, proper deferred-rotation and rest-rotation schemes offer the range manager one of the most important tools in obtaining sustained productivity from rangelands."

Under the grazing system, each allotment would be divided into two or more grazing pastures which would be grazed by livestock or deferred from livestock use in a prescribed manner designed to accomplish the objectives.

The selection of the specific proposed grazing system to be applied to allotments was based upon several factors: (1) the effects of livestock grazing and livestock management facilities (fences and water developments) upon all the resources of the area; (2) simplicity (i.e., minimizing the number of pastures and livestock handling); (3) range suitability for cattle; (4) the needs and wishes of the livestock operators if they do not seriously conflict with resource values (See appendix 1-C for rationale for selecting grazing systems).

Seasonal Continuous Grazing (Seven Allotments, 67,162 Acres). Continuous grazing is season-long grazing by livestock, in the same area, year after year. This system is usually used when no other system is feasible or economical. Under continuous grazing, stocking rates must be low enough to insure that desired forage plants maintain vigor and produce seed crops.

Deferred Rotation Grazing (Three Allotments, 21,198 Acres). Deferred rotation grazing is any system of grazing which delays grazing in succeeding years on a portion of the range until a specific plant growth stage is reached. The entire range unit is used at sometime during the grazing system. Two or more pastures are necessary, the number being governed by the date the seed of the key forage plant matures and the desired season of use. Example: If the seed matures in the middle of the grazing season, two pastures are required; if maturity occurs after one-third of the grazing season has been completed, three pastures are needed, etc. Grazing is rotated among all pastures during the grazing season, except one, which is deferred each year until after seed of the key forage plants is mature.

Rest Rotation Grazing (Six Allotments, 220,640 Acres). Rest rotation grazing rests the range from grazing at suitable intervals dictated by the growth requirements of key forage plants. It is mainly useful to counteract the effects of the selective grazing habits of livestock. The system allows desirable forage species to recover vigor, produce seed and reproduce. Three or more pastures are most desirable, each having approximately equal grazing capacity. Four basic treatments are applied to each pasture under this system. These are:

1. Graze the range.
2. Rest the range until plant vigor is restored.
3. Continue to rest range until seed ripens, then graze to scatter and trample seed.
4. Rest the range until seedlings become established.

These four steps may take three, four, five or more years to apply to a given pasture depending on the growth requirements of the key species. Completion of the yearly treatments culminating in establishment of reproduction constitutes a grazing cycle. During a grazing cycle, each pasture is given the prescribed yearly treatment, so some pastures are rested while others are grazed.

Support Requirements.

Range Improvements. Table 1-8 identifies the range improvement projects and vegetation manipulations by allotment. Table 1-9 indicates the range improvement cost schedule and the annual maintenance costs of the proposed range improvements are shown in Table 1-10.

TABLE 1-8

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake	None	6	2.5	4	1200	None	None
Herd Creek	3.25	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	57.35	51	44.5	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

Table 1-9

Range Improvement Cost Schedule

Project	Units	Cost/Unit	Total Cost
Fencing	57.35 Miles	$3,600	$206,460
Spring Developments	51 each	$2,000	102,000
Water Pipelines	44.5 Miles	$1,400	623,000
Water Troughs	31 each	$ 240	7,440
Brush Beat	21,075 acres	$ 15	316,125
Plow and Seed	1,310 acres	$ 30	39,300
Burn	1,000 acres	$ 6	6,000
			$1,300,325

Table 1-10

Annual Maintenace Cost of Proposed Range Improvements

Proposed Range Improvement	Units	Annual Maintenance Cost Per Unit	Total Annaul Maintenance Cost
Fencing	57.35 miles	$ 35	$ 2,007
Spring Developments	51 each	150	7,650
Water Pipelines	44.5 miles	500	22,250
Water Troughs	31 each	10	310
	Total Annual Maintenance Cost		$32,217

Vegetation Manipulation.

Brush Beating. Approximately 21,075 acres of sagebrush would be treated with a rotary-type brush beater. A single rotary cutter would cut a swath approximately seven feet wide. The cutter would be pulled at less than three miles per hour to prevent bouncing and inefficient cutting. This type of treatment would be accomplished during summer months when the sagebrush plants are most brittle.

Plow and Seed. Approximately 1,310 acres would be plowed by a brushland plow pulled by a track type tractor to kill the sagebrush. A rangeland drill pulled by a tractor would be used to sow a mixture of suitable grasses, forbs and browse seed. This plowing would be accomplished during summer months when greater percent kill of sagebrush would be accomplished. Seeding would be completed in the fall immediately following the plowing phase.

Burning. Approximately 1,000 acres would be burned in the fall. The first step in burning operations would be to establish a 50-foot-wide firebreak around the area to be burned. This would be accomplished by spreading a fire retardant on or water soaking two 20-foot-wide strips around the perimeter of the treatment site. Between the strips a 50-foot zone would remain intact. After fireproofing the strips, the 50-foot zone would be burned to establish the firebreak.

Later, when weather conditions permitted, backfires would be set adjacent to the downwind side of the firebreak to burn out the enclosed area. Firefighting equipment would be available at the site to minimize danger of fires escaping.

(Standard Operating Procedures). The following procedures would be followed in the construction of the proposed range improvements and vegetation manipulations.

(1) Permanent roads or trails will not be constructed to project sites. Existing access and off-road vehicles would be used where needed.

(2) An archaeological clearance will be required for each project site before construction. Intensive surveys will be conducted to locate any cultural or paleontological remains present. If such remains are discovered, the improvement will be relocated or redesigned to avoid the remains. If the project cannot be moved, a mitigative data recovery or salvage program will be completed before construction. The clearance process will comply with relevant laws and required procedures throughout.

Permits required for construction will contain stipulations to protect buried resources and provide for additional surveys should project locations be changed.

If, as a result of a cultural resource survey and inventory, significant (relative importance, determined by its socio-cultural and/or scientific value) resources are located, those resources are subject, under the provisions of Section 106 of the National Historic Preservation Act of 1966, to review and comment by the Advisory Council. The Advisory Council must by afforded an opportunity to comment on Federal, Federally assisted, or Federally licensed undertakings which may affect properties listed in or eligible for listing in the National Register of Historic Places. These procedures are directed by NHPA, Section 106, to be taken into account prior to the undertaking of the herein proposed action by the Bureau.

(3) An endangered plant survey and clearance will be required for each project site before construction. If threatened or endangered plants are found and the range improvements would diminish the value of the habitat for the species encountered, the project will be relocated or abandoned. There are no plants officially listed as endangered or threatened in the Challis Unit. Several species are proposed.

(4) Disturbance of soil and vegetation at all project sites will be held to an absolute minimum. All disturbed areas will be reseeded with a mixture of native and/or introduced species as soon as possible in order to replace ground cover on the sites.

(5) Areas of soil disturbance will be smoothed and contoured to blend into the surrounding soil surface.

(6) An endangered animal clearance will be required before any construction can be started. If threatened or endangered species are found in the planning stage and the improvements would lessen the value of the habitat for the given species, the project will be relocated or abandoned.

(7) Through thoughtful planning and good design, proposed range improvements will be made to blend gracefully with the natural landscape. The visual resource contrast rating will be conducted before the construction of the proposed improvements. Where the visual resource will be impaired, the range improvements will be modified by design, location or both as necessary to meet Visual Resource Management class objectives.

(8) Areas identified as having potential wilderness values will be evaluated before implementation of any proposed range improvements.

(9) Livestock watering facilities will provide water by leaving water turned on in allotments and rested pastures during determined periods of need for wildlife and wild horses.

(10) Areas that are plowed and reseeded will be protected from livestock grazing for two growing seasons. Areas that are burned will be protected for at least one growing season. If reseeded and burned areas are slow to reestablish sufficient cover, extended time would be provided for good establishment. All vegetation manipulation projects installed in allotments under rest-rotation will be initiated at a time to utilize the rest period for establishment of vegetation.

(11) Bird ramps in watering troughs, lateral watering sites off pipelines, overflows at troughs and protected seep areas will be established for wildlife and wild horses use where the need is identified on new water improvements.

(12) Fence construction in identified wildlife use areas will follow guidelines set forth in BLM Manual Section 1737. Fences constructed in wild horse and burro use areas should have enough contrast with the surrounding environment so as to make them visible to wild horses and burros. Lay-down fences will be built in wild horse and burro areas wherever the need is identified and feasible.

(13) Spring developments will be fenced to prevent trampling and overgrazing of the adjacent vegetation.

(14) Water gaps and cattle crossings will be constructed in fences to be built along stream bottoms to allow livestock access to water.

(15) All burns will be implemented during the fall to reduce the erosional hazards to the watershed.

Manpower Requirements. The District Office needs an additional eight permanent positions to develop and carry out the proposed action.

Monitoring Programs. Resource monitoring would be necessary to document changes occurring as a result of implementing the proposed action. Monitoring programs would be initiated during the first phases of implementation.

(Grazing Management Evaluation). BLM would ensure compliance with the grazing system and monitor the impacts of the system. BLM would issue licenses in accordance with the grazing regulations (43 CFR 4100) for grazing livestock on each allotment within the framework of the grazing system. The grazing license would specify the grazing area, livestock numbers and class, and season of use and AUM's to which the licensee is entitled. BLM employees would make routine allotment inspections to ensure that livestock numbers and time of grazing for each pasture comply with that authorized by the license. In accordance with 43 CFR 4100, grazing privileges would be reduced in whole or in part for as long as necessary when the range is depleted from drought or other causes. BLM would also control livestock trespass in accordance with the grazing regulations (43 CFR 4150).

Studies and evaluation procedures would be conducted on the grazing management program in accordance with BLM Manual Section 4412 to determine if the MFP and specific objectives are being met. These studies typically include compilation of actual use, range trend, range/watershed condition, utilization, weather data, carrying capacity, and wildlife habitat monitoring. Similar studies and/or periodic visual checks would also be conducted on the allotments under limited (area-wide grazing) management. Where specific objectives are not met, adjustments in season of use, livestock numbers (including removal) or the entire grazing system would be made depending on indicated need. An Environmental Assessment Record (EAR) would be prepared prior to initiating any substantial change in grazing.

(Wild Horses). Wild horse monitoring would include:

1. Population structures and dynamics to determine changes, if any, recurring in herd population structure and dynamics.

2. Behavioral changes as a result of livestock management systems.

3. Intensity of horse use and the condition and health of horses using winter ranges.

4. The effect of all existing and proposed fences on horses. Provisions for change in the fences would be made when or if problems arose.

(Threatened or Endangered (TE) Plants).

1. A botanical survey of the unit would be undertaken at the earliest date to determine which TE plants are actually present, where they are located, and the extent of impact due to livestock use.

2. A system of monitoring, perhaps in conjunction with other continuing studies, would be undertaken to determine trends for TE plants.

3. Should it be determined that certain TE plants warrant protection, limited area would be set aside by fencing or some other form of livestock exclusion to ensure their survival.

(Cultural Resources). All eligible National Register resources in the unit would be monitored on a regular basis. Each resource site would be inspected at least semi-annually, and the inspections documented.

If, as a result of monitoring, the BLM becomes aware of adverse impacts occurring to specific cultural resources, the following appropriate mitigating measures, among others, would be undertaken: adjustments in livestock grazing management; site-specific cultural resource protection measures; salvage of cultural resources. Specific mitigating measures would be determined by the significance of the cultural resource and degree of impact.

BLM policy provides mitigation for all cultural resources being adversely impacted. To accomplish this objective, the BLM would develop a cultural resource management activity plan over the next three years. This plan would provide detailed data on non-National Register cultural resources and the degree of adverse impacts occurring. Once this plan is completed, the following mitigating measures, among others, would be undertaken where appropriate: adjustments in livestock management; site-specific cultural resource protection measures; salvage of cultural resources. Specific mitigating measures would be determined by the significance of the cultural resource and the degree of impact.

Pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) BLM will, prior to the approval of the expenditure of any Federal funds or prior to the granting of any license, permit, or other approval for an undertaking, afford the Council an opportunity to comment on the effect of the undertaking upon properties included in or eligible for inclusion in the National Register.

(Aquatic Life and Water Quality). Combined water quality and fish habitat monitoring studies, which could include protective exclosures, would be undertaken to document changes due to implementation of the proposed grazing systems and to provide a basis for changing management of livestock if objectives for water quality and fish habitat are not met. Monitoring would be conducted jointly with the U.S. Geological Survey in the Road Creek Watershed, using previous sampling stations in conjunction with several supplemental stations.

Standard water chemistry tests and physical measurements would be collected at predetermined time intervals to obtain valid conclusions from the data. Important physical parameter measures would include stream discharge, water temperature, turbidity and suspended sediments, which would provide estimates of sediment discharge. Bacteriological sampling would be monitored at weekly intervals during livestock treatments. Analysis would proceed concurrently with sampling.

After studies are completed, appropriate adjustments in the management of livestock grazing use would be made to mitigate adverse impacts.

(Wildlife). Wildlife studies would be established on crucial big game ranges to monitor habitat condition and trend, and to ascertain which grazing animals are primarily responsible for any habitat deterioration that occurs. Studies would also be performed to better delineate the actual use areas of each big game species in winter, and any fawning, calving, or lambing areas. An effort would be made to delineate sage grouse strutting, nesting, and wintering areas.

INTERRELATIONSHIPS

Federal Programs

Coordination with the Challis National Forest and Sawtooth National Recreation Area is maintained for a variety of programs. Project work such as boundary fences, spring developments, etc., where BLM and one or both of the other agencies are involved are always coordinated on the basis of a cooperative agreement signed in 1978. Trespass control has been a joint effort as are wildlife censuses. Presently a bighorn sheep habitat management plan is being written with BLM, Forest Service, SNRA, and other state agencies involved.

Grazing AMPs (Allotment Management Plans) are being coordinated to some extent with the USFS where possible. One plan (Herd Creek) involving approximately 66 percent USFS lands and 34 percent BLM lands is now in operation and fully implemented. The plan was written in 1975 by Challis National Forest personnel and put into effect the following year. Management goals, responsibilities, and improvements were set up for each agency.

Currently, coordination with Challis National Forest is centered around joint projects such as springs and fences that need to be constructed to facilitate the implementation of the Challis ES. There are a few other allotments such as Thompson

Creek that would allow for coordinated BLM/USFS grazing plans and these are being considered. In general most of the allotments by nature of topography do not lend themselves to a joint plan.

Twenty-four of the total 38 operators having BLM grazing privileges within the Challis Planning Unit also have Forest Service permits. Livestock use on the public land is primarily spring grazing prior to entering Forest Service lands. The dependency of these operators for spring and summer grazing is critical to their operations.

If grazing use on National Forest Lands contiguous to the Challis Unit is altered as a result of the National Park Service - Sawtooth National Recreation Area study now underway, four permittees could be affected.

State Programs

In 1975, Idaho Department of Health and Welfare (IDHW) contracted for an inventory of all federal, state, and local programs having nonpoint source pollution implications.

All wildlife within the Challis Unit is managed by the Idaho Department of Fish and Game. The BLM assumes the responsibility for managing habitat. The proposed action would affect many wildlife species, necessitating close coordination between the two agencies.

The Idaho State Land Board permits grazing use on most of the state land within the Challis Unit. It is expected that the Board would oppose any reductions in the use on the these sections that BLM now allows under exchange of use. The state land in the Unit totals 18,046 acres which comprises approximately 5.1 percent of the total acreage.

Presently, there is considerable planning for the purpose of blocking up the state sections into a more manageable unit for the state as well as BLM. Considerable work would have to be done before this effort would ever be accomplished.

The state is also involved on a few range improvements with the BLM as well as the bighorn sheep habitat management plan.

Private Programs

The proposed Tuscarora mine and mill operation consists of an open pit mine operation for molybdenite-bearing materials and a processing plant producing a concentrate of molybdenite mineral. Other components of the operation include waste storage, tailing

pond and access roads. Total surface requirements would be about 1,331 acres or slightly more than half the acreage of the Bruno Creek Allotment. It is possible this would reduce the carrying capacity of the allotment by 50 percent, necessitating a revision in the proposed AMP if the proposal materializes.

Interdependence of Lands

The administration of public lands involves a complex interdependence between lands of different ownership, uses, capabilities and needs. The Challis area involves lands that are managed by the U.S. Forest Service, Bureau of Land Management, State of Idaho, and private parties. The use patterns of these lands have evolved over a long period of time, and a strong interdependence has developed in their management.

Private lands along the drainage bottoms have been used primarily for the production of forage crops to sustain livestock operations through winter months. These properties are also the land to which federal grazing privileges are attached. Some of the private lands are also used for commercial recreation purposes. Most of the private lands are dependent upon additional federal or state lands to sustain a yearlong cattle operation.

Public lands are used primarily for livestock grazing, wildlife habitat, recreation, and other resource uses. Livestock use is made primarily during spring and fall seasons.

Grazing use of public lands is dependent upon the capability of private lands to sustain livestock during early spring until the forage on public lands is ready for grazing. Public lands are also dependent upon U.S. Forest Service lands during late spring and fall seasons. During years when vegetation growth is late on Forest Service lands, the livestock must be held for longer periods of time on private, BLM or state lands.

Forest Service lands are dependent upon adjoining lands of different ownership. Adjoining lands must be relied upon to provide grazing, fire protection, and access to and from Forest Service lands. Close coordination between the various land managing agencies is required in order to accomplish common goals and avoid resource use conflicts. When allotment management plans are developed, they may include National Forest lands or other lands as an aggregate.

ASSUMPTIONS AND ANALYSIS GUIDELINES

1. The proposed action or alternative allotment management plans (AMPs) will be prepared and implemented over the five-year period following completion of the final environmental statement supplement.

2. When allotment management plans are prepared, an environmental analysis will be made to assess the impacts of the grazing treatments and site specific impacts of range improvements and vegetation manipulations.

3. The Bureau of Land Management (BLM) will fund the improvements required to implement the proposed action, and do so within the stated time frame.

4. A wild horse activity plan will be prepared which includes the removal of wild horses from the range to meet the number in the proposed action. An Environmental Assessment Record will be prepared on this activity plan.

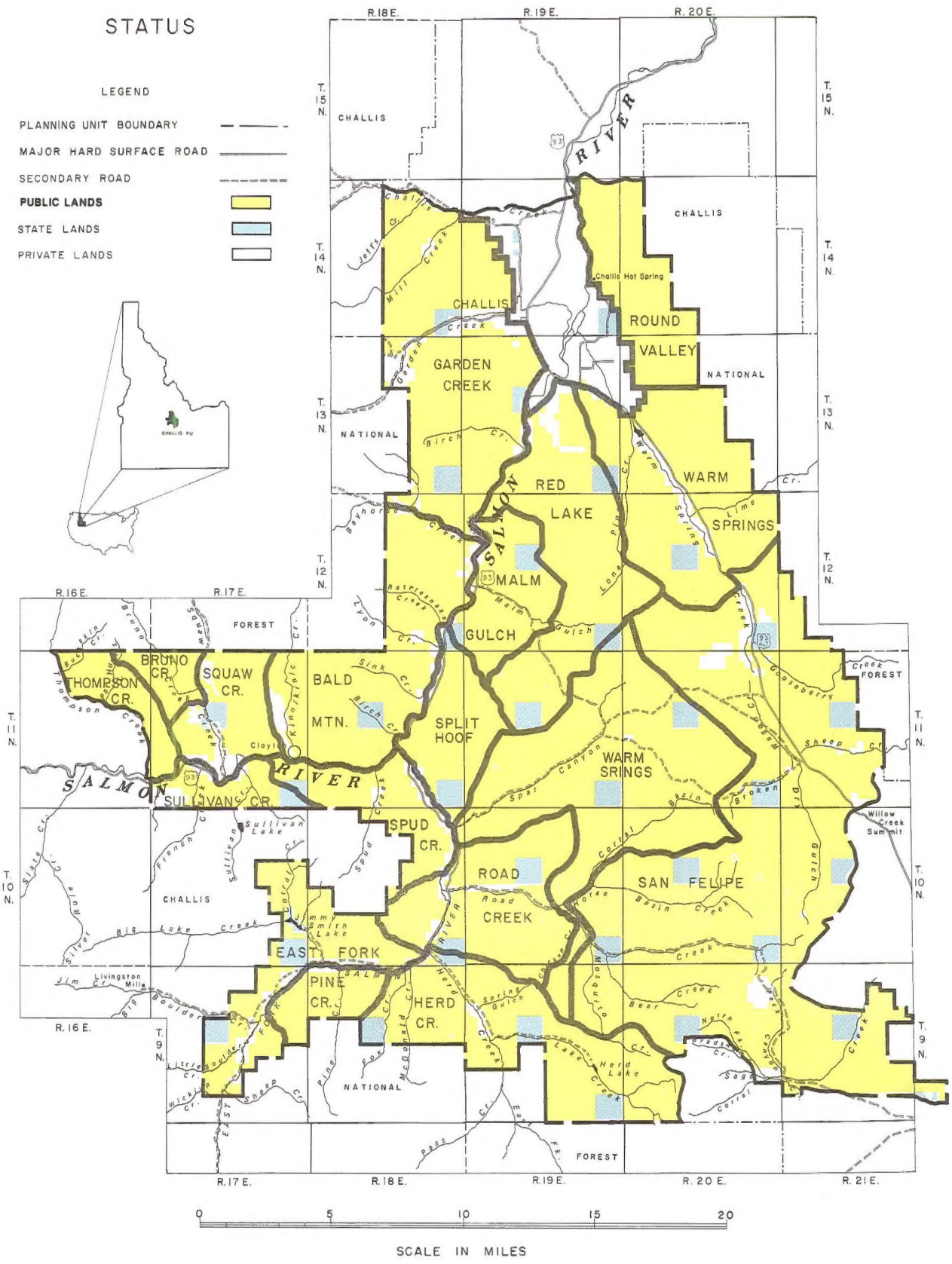
5. The necessary manpower will be furnished by and to the Salmon District, and a rigorous effort will be made to completely carry out the monitoring program.

6. There is an existing allotment management plan for livestock grazing in the Herd Creek Allotment. This is a cooperative plan with the Challis National Forest. One pasture is on public land and two pastures are on the National Forest. This plan would be continued as presently stocked for two or more rotation cycles, and at this time, the allotment would be evaluated for effectiveness of the system.

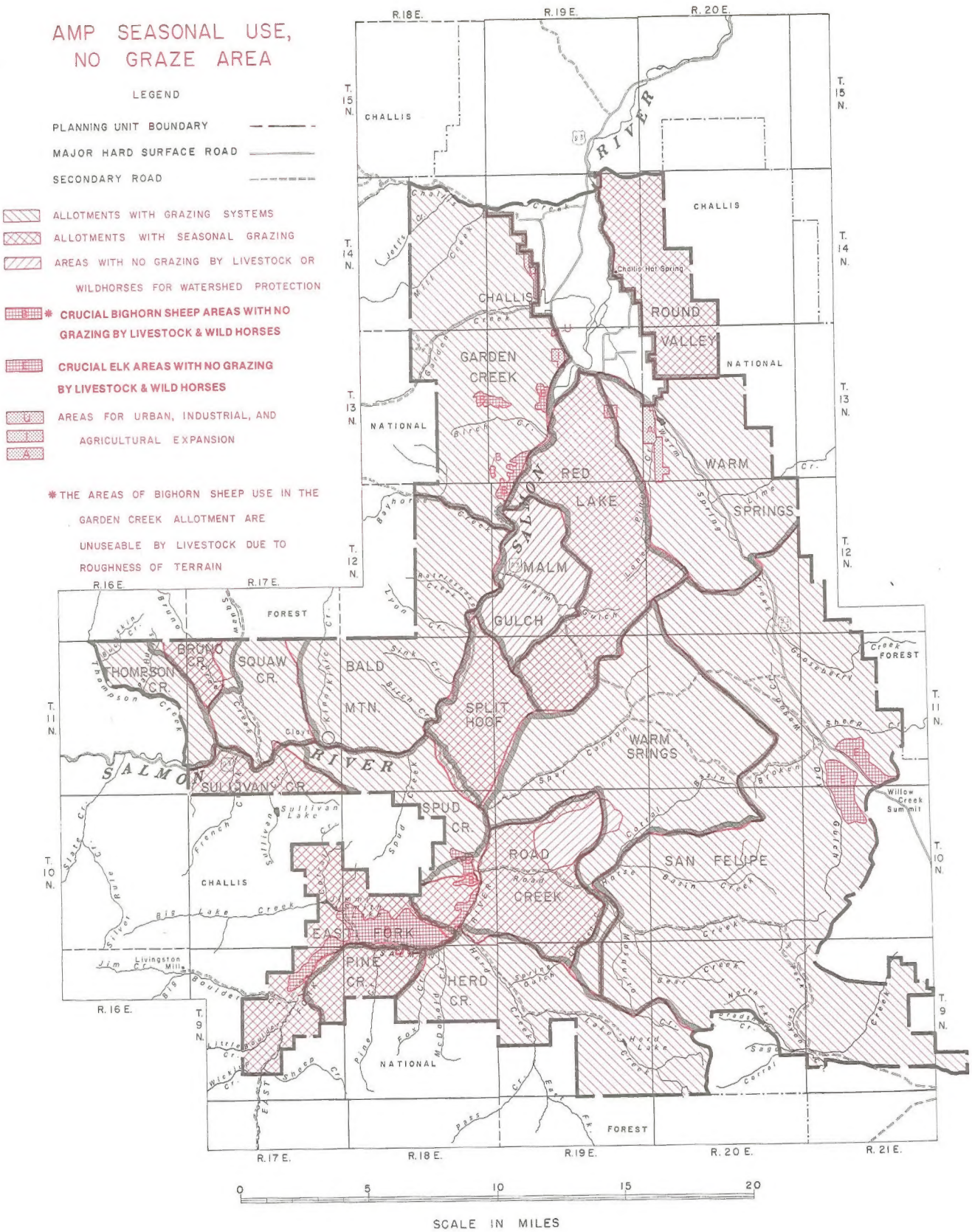
7. In addition to the improvements described in the proposed action, the following existing improvements will be maintained in serviceable condition:

Spring Developments	65
Pipelines	12.92 Miles
Reservoirs	40
Wells	3
Fences	73.7 Miles
Cattleguards	17
Exclosures	4
Sagebrush Spraying	1,530 Acres
Grass Seeding	142 Acres
Bitterbrush Seeding	60 Acres
Stock Trails	19.2 Miles
Detention Dams	4

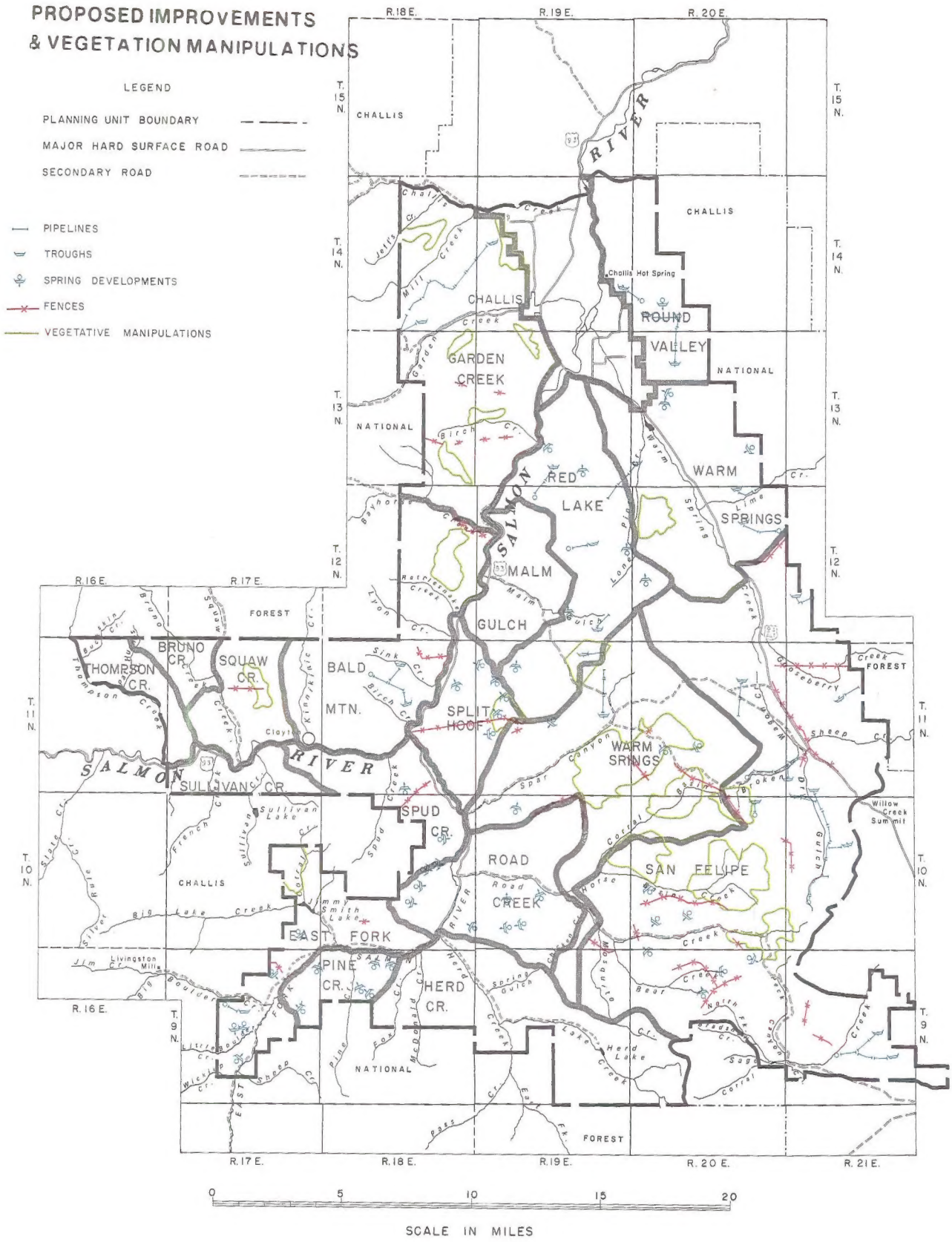
The schedule for maintenance of range improvements and vegetation manipulation projects is found on the Job Documentation Report of each project. Maintenance responsibility is also identified in that document.



MAP 1-1 ALLOTMENT BOUNDARIES AND LAND OWNERSHIP STATUS OF THE CHALLIS UNIT



MAP 1-2 PROPOSED GRAZING TREATMENTS AND NO GRAZING AREAS



MAP 1-3 PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATION AREAS

Chapter 2

Description of the Environment

VEGETATION

The 13 broad vegetation types found within the ES Area are shown on Map 2-1. Table 2-1 and Table 2-3 identify the major vegetation species associated with each broad type. The condition class, apparent trend, and forage production data for each broad type is also presented on Table 2-1. For specific condition, trend and forage production by vegetation type and allotment, refer to Table 2-1 and 2-2. The methodology for determining condition, trend, and forage production is outlined specifically in the Soil Conservation Service Handbook (1976). A summary of this methodology is presented in Appendix 2-A. Table 2-4 illustrates the present total of biomass production in pounds of vegetation produced by each ecological site within each allotment. Table 2-5 illustrates the percent composition of grasses, forbs and shrubs within each broad vegetation type and each condition class.

Range Condition - Defined as the present state of the vegetation within a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds and amounts of plants in a community resemble that of a climax plant community for that same site. Range condition, ecological condition and vegetation condition are used synonymously in this document.

Four classes are normally used to express the degree to which the composition of the present plant community reflects that of climax.

Condition Class	Percentage of the Present Plant Community that is Climax Vegetation
Excellent	76-100
Good	51- 75
Fair	26- 50
Poor	0- 25

Condition class ratings for the vegetation within the ES Area are as follows: (see Table 2-7 for allotment totals)

Good - 33,815 acres (12% of the total area)
Fair - 145,440 acres (52% of the total area)
Poor - 103,567 acres (36% of the total area)

Table 2-6 illustrates present and potential AUM production under proper use levels during spring and summer grazing for each allotment. Methodology for determining forage production is explained in Appendix 2-A.

Trend - The trend in range condition is a determination of whether the range condition is improving, deteriorating or remaining stable. Trend is usually referred to as upward, downward or static. Factors used in determining trend are changes in vegetative composition, abundance of seedings, amount of plant residues, plant vigor and condition of the soil surface. For specific trend data by vegetation type and allotment see Table 2-10. Present trend data is as follows:

Upward - 12,790 acres (4% of total area)
Downward - 72,977 acres (22% of total area)
Static - 197,055 acres (60% of total area)
Rock, Doug.
Fir, Burn 47,300 acres (14% of total area)
(See Tables 2-7 and 2-10 allotment totals for trend.)

Suitability for Livestock Grazing - A vegetation inventory was conducted for the ES Area in 1977. During the inventory, a suitability rating was given to all public lands in the area. The suitability was based on steepness of slope, availability of water, and productivity of the vegetation within a given area. For specific criteria used in determining suitability see Appendix 2-C.

See Appendix 2-A for an explanation of the methodology used in conducting the vegetation/soils inventory and Appendix 2-D for determining vegetation condition and trend. Appendix 2-E explains the relationship between ecological site descriptions and vegetation types shown on map 2-1.

Poisonous Plants - Four species of poisonous plants occur in the Challis Unit: halogeton, death camas, larkspur, and water hemlock.

Halogeton is not abundant throughout the unit, but is found in small scattered patches, particularly in disturbed areas and along frequently graded roads at lower, drier elevations. It is found on Bradbury Flat near the junction of the road to Poverty Flat, Sink Creek, and the old Bower Ranch. It is also found on some roads in the Round Valley Allotment, the road to Horseshoe Detention Dam and along Warm Springs Creek.

Death camas is present early in the spring on some well-drained soil areas that receive abundant spring moisture. It has not caused significant animal losses to date.

Larkspur has caused problems in the upper Sink Creek drainage and measures have been taken to control it. Other areas have larkspur, but no incidents of poisoning have been reported.

Water hemlock is present but has not posed a problem.

TABLE 2-1

VEGETATION TYPES, CONDITION AND FORAGE PRODUCTION

Vegetation Type	Major Associated Vegetation Species	Total Acres (Public)	Percent of Total	Condition Class a/ (Acres) (Poor)	(Fair)	(Good)	AUMs Available For Livestock
Wet Meadow	Sedge, Kentucky bluegrass, roses, currants, willows, rushes.	424	0.1	121.8	227.4	74.8	522
Wyoming Big Sage	Wyoming big sagebrush, bluebunch wheatgrass, Sandberg bluegrass	118,151	35.8	46,757.1	55,679.5	15,714.5	2,609
Mountain Big Sage	Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass	72,920	22.1	23,111	40,569.9	9,239.2	4,073
Basin Big Sage	Basin big sagebrush, thickspike wheatgrass, western wheatgrass	2,298	0.7	1,464.3	824.4	8.8	104
Low Sage	Low sagebrush, Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass	2,081	0.6	1,187.7	699.3	194	104
Black Sage	Black sagebrush, bluebunch wheatgrass	12,312	3.7	3,724	7,405.2	1,183.2	417
Three Tip Sage	Threetip sagebrush, Idaho fescue, bluebunch wheatgrass	23,332	7.1	8,004.7	13,387.1	1,940.2	1,043
Mountain Mahogany	Mountain mahogany, bluebunch wheatgrass, Idaho fescue	4,085	1.2	933.6	2,825.3	326	104
Douglas Fir	Douglas fir, snowberry, pinegrass	22,492	6.8	-	-	-	-
Shadscale	Shadscale, needle-and-thread grass, Indian ricegrass, sand drop seed	32,909	10.0	8,991	19,206.2	4,711.3	1,148
Nuttall Saltbush	Nuttall saltbush, Indian ricegrass, bottlebrush squirreltail	1,934	0.6	1,837.1	97.3	-	31
Nuttall Tansy	Chicken sage, Hood's phlox, Sandberg bluegrass	11,857	3.6	7,020.2	4,495	341.7	208
Riparian Zones	Cottonwood, aspens, birch, alders, Kentucky bluegrass, slender wheatgrass.	519	0.1	414.5	23	81	73
Burn (1977)	No condition, class, or trend	189	0.1	-	-	-	-
Rock		24,619	7.5	-	-	-	-
Totals		330,122	100	103,567	145,439.6	33,815	10,436
Percent of Total				(36%)	(52%)	(12%)	

a/ No condition class ratings were made for Douglas fir, burn areas, or rock. Therefore, the total acreage will not equal totals for the ES area or the total acreage shown for trend.

b/ Trend data includes 3,116 acres of seedings that have returned to native conditions. No trend data is tabulated for burned area or rock. Therefore, total acreage figure will not equal totals for the ES area.

TABLE 2-2

PRESENT PRODUCTION BY VEGETATIVE TYPE AND CONDITION CLASS
(ACRES AND AUMs ON PUBLIC LANDS)

Allotment	Basin Big Sagebrush (ARTRT)						Wyoming Big Sagebrush (ARTRW)						Mountain Big Sagebrush (ARTRV)					
	Good		Fair		Poor		Good		Fair		Poor		Good		Fair		Poor	
	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S
Red Lake			27.5	1.4	69.9	0.0	997.6	16.6	1864.1	74.4	3211	7.9	284.6	37.5	2073.6	115.9	585	16.5
Herd Creek	8.3	2.1	7.1	1.0			2400.5	77.4	364.8	10.5	936.3	19.1	4897	210.4	5487.7	368.6	709.2	45.0
Road Creek			92	0.5	50.9		1209.7	7.9	5600.5	80.2	1887.9	1.0	467.4	2.1	2283.6	66.4	133.5	1.5
Bruno Creek							55	0.8	24.5	0.8	2.7	0.0	439.2	16.6	511.8	33.5	73	4.0
Round Valley	.5	0.0	56.9	3.0	138.2	0.0	3443.3	58.0	798.1	36.4	96.3	0.0	114	0.9				
San Felipe			123.9	14.6	591.3	0.2	911.2	36.0	5961.3	231.9	14395.6	78.0	1197.7	17.8	12848.7	555.6	8496.2	297.2
Seedings					(16.8)						(2269.9)							
Warm Springs			517	33.9	355.8	1.2	2406.4	35.1	13897.6	358.9	5047.4	52.0	328.3	25.1	4499.4	180.8	5807.5	223.6
Garden Creek							120.4	1.2	12367.7	189.5	5149.2	3.6	310.7	0.0	1582.9	63.0	978.2	5.5
Bald Mountain							65.6	0.2	2131.8	13.0	4725.9	3.6	237.7	2.1	2617.8	30.5	1192.8	8.8
Burn							(83.8)	0.5					(94.6)	0.1				
Thompson Creek									387.5	1.5	157	0.1	275.5	0.0	1731.3	13.4	591.1	0.9
Split Hoof									4170.9	57.2	2289.8	0.2			279.6	9.8	13.9	0.0
Squaw Creek							301	4.0	692.8	5.8	405.1	0.2	459.1	9.1	318.1	19.9	1876.1	45.9
Spud Creek							186.3	1.8	2018.6	45.0	2586.7	0.0	121.1	4.0	727.1	18.1		
Pine Creek									912.8	13.1	432.7	0.0			2271.6	82.6	120.3	0.0
East Fork									2480.8	27.8	2024.9	5.0	54.8	0.0	2057.2	49.5	2096.2	18.5
Sullivan Creek					1.9	0.1	3.8	0.0	128	2.6	87.7	0.5			1255.2	78.5	392.3	7.5
Malm Gulch					239.5	7.8	3613.7	61.0	1877.7	66.0	1051	43.1	52.1	2.0	24.3	1.6	45.7	2.8
Totals																		
Site/Condition Class	8.8		824.4		1447.5		15714.5		55679.5		44487.2		9239.2		40569.9		23111	
Seedings					16.8						2269.9							
Burn							83.8						94.6					
AUM's		2.1		54.4		9.3		300.5		1214.6		214.3		327.7		1687.7		677.7

Note: The 1977 inventory identified 6846 AUM's available using the suitability criteria as described in Washington Office Instruction Memorandum 78-134. This table totals 6846 AUM's, however, allocation of forage to livestock in Chapter 1 is for 10,436 AUM's or the forage available utilizing suitability criteria for the State of Idaho described in Appendix 2-C.

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Basin Big Sage	Basin big sagebrush, thickspike wheatgrass, western wheatgrass	2,298	0.7	1,464.3	824.4	8.8	104
Low Sage	Low sagebrush, Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass	2,081	0.6	1,187.7	699.3	194	104
Black Sage	Black sagebrush, bluebunch wheatgrass	12,312	3.7	3,724	7,405.2	1,183.2	417
Three Tip Sage	Threetip sagebrush, Idaho fescue, bluebunch wheatgrass	23,332	7.1	8,004.7	13,387.1	1,940.2	1,043
Mountain Mahogany	Mountain mahogany, bluebunch wheatgrass, Idaho fescue	4,085	1.2	933.6	2,825.3	326	104
Douglas Fir	Douglas fir, snowberry, pinegrass	22,492	6.8	-	-	-	-
Shadscale	Shadscale, needle-and-thread grass, Indian ricegrass, sand drop seed	32,909	10.0	8,991	19,206.2	4,711.3	1,148
Nuttall Saltbush	Nuttall saltbush, Indian ricegrass, bottlebrush squirreltail	1,934	0.6	1,837.1	97.3	-	31
Nuttall Tansy	Chicken sage, Hood's phlox, Sandberg bluegrass	11,857	3.6	7,020.2	4,495	341.7	208
Riparian Zones	Cottonwood, aspens, birch, alders, Kentucky bluegrass, slender wheatgrass.	519	0.1	414.5	23	81	73
Burn (1977)	No condition, class, or trend	189	0.1	-	-	-	-
Rock		24,619	7.5	-	-	-	-
Totals		330,122	100	103,567	145,439.6	33,815	10,436
Percent of Total				(36%)	(52%)	(12%)	

a/ No condition class ratings were made for Douglas fir, burn areas, or rock. Therefore, the total acreage will not equal totals for the ES area or the total acreage shown for trend.

b/ Trend data includes 3,116 acres of seedings that have returned to native conditions. No trend data is tabulated for burned area or rock. Therefore, total acreage figure will not equal totals for the ES area.

TABLE 2-2

PRESENT PRODUCTION BY VEGETATIVE TYPE AND CONDITION CLASS
(ACRES AND AUMs ON PUBLIC LANDS)

Allotment	Basin Big Sagebrush (ARTRT)						Wyoming Big Sagebrush (ARTRW)						Mountain Big Sagebrush (ARTRV)					
	Good		Fair		Poor		Good		Fair		Poor		Good		Fair		Poor	
	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S
Red Lake			27.5	1.4	69.9	0.0	997.6	16.6	1864.1	74.4	3211	7.9	284.6	37.5	2073.6	115.9	585	16.5
Herd Creek	8.3	2.1	7.1	1.0			2400.5	77.4	364.8	10.5	936.3	19.1	4897	210.4	5487.7	368.6	709.2	45.0
Road Creek			92	0.5	50.9		1209.7	7.9	5600.5	80.2	1887.9	1.0	467.4	2.1	2283.6	66.4	133.5	1.5
Bruno Creek							55	0.8	24.5	0.8	2.7	0.0	439.2	16.6	511.8	33.5	73	4.0
Round Valley	.5	0.0	56.9	3.0	138.2	0.0	3443.3	58.0	798.1	36.4	96.3	0.0	114	0.9				
San Felipe			123.9	14.6	591.3	0.2	911.2	36.0	5961.3	231.9	14395.6	78.0	1197.7	17.8	12848.7	555.6	8496.2	297.2
Seedings					(16.8)						(2269.9)							
Warm Springs			517	33.9	355.8	1.2	2406.4	35.1	13897.6	358.9	5047.4	52.0	328.3	25.1	4499.4	180.8	5807.5	223.6
Garden Creek							120.4	1.2	12367.7	189.5	5149.2	3.6	310.7	0.0	1582.9	63.0	978.2	5.5
Bald Mountain							65.6	0.2	2131.8	13.0	4725.9	3.6	237.7	2.1	2617.8	30.5	1192.8	8.8
Burn							(83.8)	0.5					(94.6)	0.1				
Thompson Creek									387.5	1.5	157	0.1	275.5	0.0	1731.3	13.4	591.1	0.9
Split Hoof									4170.9	57.2	2289.8	0.2			279.6	9.8	13.9	0.0
Squaw Creek							301	4.0	692.8	5.8	405.1	0.2	459.1	9.1	318.1	19.9	1876.1	45.9
Spud Creek							186.3	1.8	2018.6	45.0	2586.7	0.0	121.1	4.0	727.1	18.1		
Pine Creek									912.8	13.1	432.7	0.0			2271.6	82.6	120.3	0.0
East Fork									2480.8	27.8	2024.9	5.0	54.8	0.0	2057.2	49.5	2096.2	18.5
Sullivan Creek					1.9	0.1	3.8	0.0	128	2.6	87.7	0.5			1255.2	78.5	392.3	7.5
Main Gulch					239.5	7.8	3613.7	61.0	1877.7	66.0	1051	43.1	52.1	2.0	24.3	1.6	45.7	2.8
Totals																		
Site/Condition Class	8.8		824.4		1447.5		15714.5		55679.5		44487.2		9239.2		40569.9		23111	
Seedings					16.8						2269.9							
Burn							83.8						94.6					
AUM's		2.1		54.4		9.3		300.5		1214.6		214.3		327.7		1687.7		677.7

Note: The 1977 inventory identified 6846 AUM's available using the suitability criteria as described in Washington Office Instruction Memorandum 78-134. This table totals 6846 AUM's, however, allocation of forage to livestock in Chapter 1 is for 10,436 AUM's or the forage available utilizing suitability criteria for the State of Idaho described in Appendix 2-C.

TABLE 2-2 (cont.)

PRESENT PRODUCTION BY VEGETATIVE TYPE AND CONDITION CLASS
(ACRES AND AUMs ON PUBLIC LANDS)

	Gray Low Sagebrush (ARARA)						Black Sagebrush (ARARN)						Three-Tip Sagebrush (ARTR4)						Douglas Fir
	Good		Fair		Poor		Good		Fair		Poor		Good		Fair		Poor		
	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES
Red Lake							252.9	7.4	2122.7	33.5	1294.3	18.9	170.2	8.1	857.3	52.6	767.7	29.9	1708.6
Herd Creek	113.6	1.9	186.5	7.1									483.6	8.6	220.5	10.1	11.5	0.9	2240.4
Road Creek	29.2		1.7										76.6	0.1	1034.9	23.6	155.6	0.2	101.3
Bruno Creek																			1201.4
Round Valley													13.6	0.5					8.2
San Felipe	13.2	0.0	98.3	3.5	414.9	13.5	365	11.2	3469.2	155.4	1247	11.1	562.4	36.2	3046.3	117.2	2879.2	69.1	4314.5
Seedings											(9.6)						(2.4)		
Warm Springs	32	3.2	94.9	3.1	456.7	11.2	511.9	13.0	1497.2	9.0	695.6	3.2	551.7	14.4	2958.7	123.2	1554.4	34.5	627.8
Garden Creek									18.2	0.1			69	0.0	2336.3	59.6	1285.9	8.6	1907
Bald Mountain									157.4	1.1					996.4	8.9	1252.8	9.8	4639.7
Burn																			(11)
Thompson Creek																			1440.1
Split Hoof									7.4	21.6					505.6	22.6	3.4	0.0	
Squaw Creek			26.1	1.4	312.5	4.5													930.6
Spud Creek															822.4	23.8	1.7	0.0	840.8
Pine Creek			237.5	4.9											481.5	14.9			205.4
East Fork	6	0.0	54.3	0.9	3.6	0.1									121.4	0.6	65.2	0.8	926.2
Sullivan Creek																			1329.7
Malm Gulch							53.4	0.0	133.1	4.9	477.5	1.8	13.1	0.6	5.8	0.1	24.9	0.0	70.2
Totals																			
Site/Condition Class	194		699.3		1187.7		1183.2		7405.2		3714.4		1940.2		13387.1		8002.3		22491.9
Seedings											9.6						2.4		
Burn																			11
AUMs		5.1		20.9		29.3		31.6		225.6		35.0		68.5		457.2		153.8	

Note: The 1977 inventory identified 6846 AUM's available using the suitability criteria as described in Washington Office Instruction Memorandum 78-134. This table totals 6846 AUM' however, allocation of forage to livestock in Chapter 1 is for 10,436 AUM's or the forage available utilizing suitability criteria for the State of Idaho described in Appendix 2-C.

TABLE 2-2 (cont.)

PRESENT PRODUCTION BY VEGETATIVE TYPE AND CONDITION CLASS
(ACRES AND AUMs ON PUBLIC LANDS)

Allotment	Mountain Mahogany (CELE3) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Shadscale Saltbush (ATCO) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Nuttall Saltbush (ATNU) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake			138.2	1.5			480.6	12.4	1392.5	62.9	1502.6	0.0			21.5	0.8	101	0.0
Herd Creek							268.2	1.9	266.7	0.0	472.7	0.5						
Road Creek							16.7	0.4	370.4	0.1	22							
Bruno Creek																		
Round Valley							2438.3	25.1	3116.6	123.9	2348	0.0			6.2	0.2	14.1	0.0
San Felipe	35.7	1.1	2109.2	21.8	692.8	4.0	3.5	0.0	1167.2	25.6	732.7	0.0			12.1	0.5	623.9	0.2
Seedings																	(817.6)	
Warm Springs	290.3	2.1	491.2	4.5	165.3	0.6	926.7	2.4	12182.4	519.9	1408.4	1.6			57.5	2.4	271.4	0.0
Garden Creek							199.1	0.0	415.4	0.0	1500.5	0.9						
Bald Mountain			50.7	0.0							309.9	0.0					8.3	0.0
Thompson Creek																		
Split Hoof									130.7	0.0	334.5	0.0						
Squaw Creek																		
Spud Creek											186.1	0.0						
Pine Creek																		
East Fork									147.1	0.0	79.3	0.0					.8	0.0
Sullivan Creek																		
Malm Gulch			36	0.5	75.5	0.2	378.2		17.2	0.0	94.3	0.1						
Total Site/Condition Class	326		2825.3		933.6		4711.3		19206.2		8991				97.3		1019.5	
Seedings																	817.6	
AUM'S		3.2		28.3		4.8		42.2		732.4		3.1				3.9		0.2

Note: The 1977 inventory identified 6846 AUM's available using the suitability criteria as described in Washington Office Instruction Memorandum 78-134. This table totals 6846 AUM' however, allocation of forage to livestock in Chapter 1 is for 10,436 AUM's or the forage available utilizing suitability criteria for the State of Idaho described in Appendix 2-C.

TABLE 2-2 (cont.)

PRESENT PRODUCTION BY VEGETATIVE TYPE AND CONDITION CLASS
(ACRES AND AUMs ON PUBLIC LANDS)

	Nuttall Tansy (Half Shrub)						Semi-Wet Meadow						Semi-Wet Stream Bottom						
	Good		Fair		Poor		Good		Fair		Poor		Good		Fair		Poor		Rock
	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	ACRES	AUM'S	Acres
Red Lake			720	12.6	720.1	0.9													1831.5
Herd Creek	45.1	1.2	39.6	2.2	8.4	0.2	74.8	83.9	64.1	60.8									2743.4
Road Creek									47.3	39.5									1984.2
Bruno Creek																			70.4
Round Valley																			910.7
San Felipe	281	10.1	3347	103.5	5985	12.8			88.5	94.5	92.7	6.9							2092.7
Seedings																			
Warm Springs	15.6	0.2	289.7	4.4	76.9	0.5			27.5	23.4									1659.8
Garden Creek			6.1	0.1													73.8	4.4	2138
Bald Mountain													23.7	5.2	23	5.4	17.5	1.1	3956.6
Thompson Creek																	37.2	2.8	975.1
Split Hoof			59	1.8	24.7	0.0											92.3	4.8	503.2
Squaw Creek													57.3	18.1					1670.6
Spud Creek																	22.5	1.4	1342.7
Pine Creek					5.6	0.0													358.6
East Fork																	113.9	7.2	1486.3
Sullivan Creek					1.3	0.0					29.1	1.8							341
Malm Gulch			33.6	0.8	198.2	0.2													621.9
Total Site/Condition Class Seedings	341.7		4495		7020.2		74.8		227.4		121.8		81.0		23		357.2		24686.7
AUMs		11.5		125.4		14.6		83.9		218.2		8.7		23.3		5.4		21.7	

Note: The 1977 inventory identified 6846 AUM's available using the suitability criteria as described in Washington Office Instruction Memorandum 78-134. This table totals 6846 AUM' however, allocation of forage to livestock in Chapter 1 is for 10,436 AUM's or the forage available utilizing suitability criteria for the State of Idaho described in Appendix 2-C.

TABLE 2-3

VEGETATION TYPES AND ASSOCIATED SPECIES
AT DIFFERENT CONDITON CLASSES

Vegetation Type	Major Associated Vegetation Species	Percent Composition (by weight)* Good	Fair	Poor
Wet Meadow	Willow	2	0	7
	Kentucky Bluegrass	2	26	11
	Sedge	30	13	0
	Other	66	61	82
Wyoming Big Sage	Wyoming Big Sage	24	38	44
	Bluebunch Wheatgrass	22	10	1
	Sandberg Bluegrass	4	4	2
	Other	50	36	53
Mountain Big Sage	Mountain Big Sage	25	47	38
	Bluebunch Wheatgrass	22	14	6
	Idaho Fescue	26	10	4
	Other	27	29	52
Low Sage	Low Sage	18	22	35
	Bluebunch Wheatgrass	3	7	2
	Idaho Fescue	10	14	4
	Sandberg Bluegrass	0	4	5
	Other	69	53	54
Black Sage	Black Sage	36	43	42
	Bluebunch Wheatgrass	37	13	8
	Other	27	44	50
Three-tip Sage	Three-tip Sage	29	33	18
	Bluebunch Wheatgrass	19	18	8
	Idaho Fescue	9	6	0
	Other	43	43	74
Mountain Mahogany	Mountain Mahogany	23	21	16
	Bluebunch Wheatgrass	14	11	10
	Idaho Fescue	8	4	5
	Other	55	64	69
Shadscale	Shadscale	22	26	52
	Needle-and-Thread	2	2	0
	Indian Ricegrass	11	5	4
	Sand Dropseed	0	7	2
	Other	65	60	42
Nuttall Saltbush	Nuttall Saltbush	56	81	88
	Indian Ricegrass	14	8	3
	Other	30	11	9
Nuttall Tansy	Chicken Sage	8	2	4
	Sandberg Bluegrass	16	5	5
	Hood's Phlox	33	48	54
	Other	43	45	37
Riparian Zone	Kentucky Bluegrass	31	58	38
	Slender Wheatgrass	25	4	0
	Other	44	38	62

*This percent composition data was found by averaging data from the clip plots and condition write-ups from the 1977 range inventory.

TABLE 2-4

PRESENT TOTAL BIOMASS PRODUCTION IN POUNDS OF VEGETATION BY ECOLOGICAL SITE FOR EACH ALLOTMENT

	Wet Meadow				ARTRW				ARTRV			
Allotment	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total
Red Lake	-	-	-	-	514,941	1,683,290	1,283,212	3,481,443	188,300	1,508,264	254,040	1,950,604
Herd Creek	149,600	121,918	-	271,518	938,070	152,372	325,043	1,415,485	3,197,132	3,837,185	305,114	7,339,431
Road Creek	-	89,966	-	89,966	539,530	2,081,003	594,684	3,215,217	272,429	1,509,309	58,930	1,840,668
Bruno Creek	-	-	-	-	21,393	9,824	948	32,165	347,847	454,492	31,090	833,429
Round Valley	-	-	-	-	1,463,077	290,418	33,246	1,786,741	66,636	-	-	66,636
San Felipe	-	168,327	57,659	225,986	403,662	2,375,398	6,180,264	8,959,324	929,667	6,294,806	3,414,283	10,638,756
Warm Springs	-	47,930	1,430	49,360	1,349,992	5,974,848	1,857,442	9,182,282	202,662	2,331,668	2,424,327	4,958,657
Garden Creek	-	-	-	-	46,835	4,900,224	1,791,063	6,738,122	238,553	1,252,991	420,550	1,912,094
Bald Mountain	-	-	-	-	25,518	799,426	1,453,719	2,278,663	182,991	2,327,224	493,260	3,003,475
Thompson Creek	-	-	-	-	-	155,388	55,176	210,564	218,195	1,247,853	250,970	1,717,018
Split Hoof	-	-	-	-	-	1,547,404	698,802	2,246,206	-	151,543	6,145	157,688
Squaw Creek	-	-	-	-	117,087	277,813	142,187	537,087	347,566	264,471	796,392	1,408,429
Spud Creek	-	-	-	-	72,469	809,457	907,933	1,789,859	88,175	437,201	-	525,376
Pine Creek	-	-	-	-	-	321,307	141,555	462,862	-	1,559,537	53,173	1,612,710
East Fork	-	-	-	-	-	994,798	710,743	1,705,541	30,529	1,389,844	928,250	2,348,623
Sullivan Creek	-	-	18,100	18,100	1,478	51,328	30,782	83,588	-	879,487	91,321	970,808
Malm Gulch	-	-	-	-	1,439,498	738,629	347,154	2,525,281	29,906	15,913	20,199	66,018
Totals	149,600	428,141	77,189	654,930	6,933,550	23,162,927	16,553,953	46,650,430	6,340,588	25,461,788	9,548,044	41,350,420

	ARTRT				ARARA				ARARN			
Allotment	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total
Red Lake	-	47,406	15,457	62,863	-	-	-	-	29,417	334,852	192,450	556,719
Herd Creek	4,565	4,614	-	9,179	68,160	60,972	-	129,132	-	-	-	-
Road Creek	-	59,800	27,130	86,930	17,522	554	-	18,076	-	-	-	-
Bruno Creek	-	-	-	-	-	-	-	-	-	-	-	-
Round Valley	350	39,830	96,740	136,920	-	-	-	-	-	-	-	-
San Felipe	-	81,382	378,431	459,813	7,919	32,142	146,045	186,106	225,569	1,866,431	425,064	2,517,064
Warm Springs	-	353,677	197,037	550,714	19,200	31,031	176,744	226,975	316,354	594,385	189,898	1,100,637
Garden Creek	-	-	-	-	-	-	-	-	-	9,792	-	9,792
Bald Mountain	-	-	-	-	-	-	-	-	-	84,680	-	84,680
Thompson Creek	-	-	-	-	-	-	-	-	-	-	-	-
Split Hoof	-	-	-	-	-	-	-	-	-	238,280	-	238,280
Squaw Creek	-	-	-	-	-	8,516	109,062	117,578	-	-	-	-
Spud Creek	-	-	-	-	-	-	-	-	-	-	-	-
Pine Creek	-	-	-	-	-	77,662	-	77,662	-	-	-	-
East Fork	-	-	-	-	3,600	17,758	1,278	22,636	-	-	-	-
Sullivan Creek	-	-	1,706	1,706	-	-	-	-	-	-	-	-
Malm Gulch	-	-	127,653	127,653	-	-	-	-	33,001	71,608	161,874	266,483
Totals	4,915	586,709	844,154	1,435,778	116,401	228,635	433,129	778,165	604,341	3,200,028	969,286	4,773,655

TABLE 2-4

PRESENT TOTAL BIOMASS PRODUCTION IN POUNDS OF VEGETATION BY ECOLOGICAL SITE FOR EACH ALLOTMENT

(cont.)

	ATCO				ATNU				TANU			
Allotment	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total
Red Lake	161,962	508,543	486,385	1,156,890	-	12,643	34,342	46,985	-	306,282	199,787	506,069
Herd Creek	58,304	62,755	66,466	187,525	-	-	-	-	24,533	15,284	3,124	42,941
Road Creek	5,627	88,238	6,185	100,050	-	-	-	-	-	-	-	-
Bruno Creek	-	-	-	-	-	-	-	-	-	-	-	-
Round Valley	636,204	1,072,139	763,691	2,472,034	-	3,646	4,794	8,440	-	-	-	-
San Felipe	739	318,294	205,773	524,806	-	7,114	410,803	417,917	133,630	1,390,735	1,675,059	3,199,424
Warm Springs	262,099	3,119,661	339,084	3,720,844	-	33,810	92,276	126,086	8,486	114,808	28,108	151,402
Garden Creek	42,010	97,619	517,673	657,302	-	-	-	-	-	2,277	-	2,277
Bald Mountain	-	-	84,913	84,913	-	-	2,822	2,822	-	-	-	-
Thompson Creek	-	-	-	-	-	-	-	-	-	-	-	-
Split Hoof	-	33,255	44,154	77,409	-	-	-	-	-	6,446	22,700	29,146
Squaw Creek	-	-	-	-	-	-	-	-	-	-	-	-
Spud Creek	-	-	24,566	24,566	-	-	-	-	-	-	-	-
Pine Creek	-	-	-	-	-	-	-	-	-	-	1,444	1,444
East Fork	-	34,569	10,468	45,037	-	-	272	272	-	-	-	-
Sullivan Creek	-	-	-	-	-	-	-	-	-	-	-	-
Malm Gulch	79,802	4,043	13,129	96,974	-	-	-	-	-	12,968	52,163	65,131
Totals	1,246,747	5,339,116	2,562,487	9,148,350	-	57,213	545,309	602,522	166,649	1,848,800	1,982,385	3,997,834

	ARTR4				CELE4				PSME	
Allotment	Good	Fair	Poor	Total	Good	Fair	Poor	Total	No Condition Class	Total
Red Lake	121,690	415,792	413,579	951,061	-	63,156	-	63,156		205,231
Herd Creek	345,772	106,943	6,266	458,981	-	-	-	-		268,846
Road Creek	54,770	501,925	84,804	641,499	-	-	-	-		12,155
Bruno Creek	-	-	-	-	-	-	-	-		144,168
Round Valley	9,722	-	-	9,722	-	-	-	-		927
San Felipe	436,987	1,309,906	947,842	2,694,735	19,349	963,906	173,201	1,156,456		517,739
Warm Springs	325,502	1,500,063	570,464	2,396,029	157,508	224,476	41,324	423,308		75,336
Garden Creek	31,395	726,589	462,924	1,220,908	-	-	-	-		228,840
Bald Mountain	-	280,985	682,776	963,761	-	23,169	-	23,169		556,766
Thompson Creek	-	-	-	-	-	-	-	-		172,812
Split Hoof	-	245,215	1,854	247,069	-	-	-	-		-
Squaw Creek	-	-	-	-	-	-	-	-		111,672
Spud Creek	-	398,864	928	399,792	-	-	-	-		100,896
Pine Creek	-	233,529	-	233,529	-	-	-	-		24,648
East Fork	-	58,880	35,535	94,415	-	-	-	-		111,144
Sullivan Creek	-	-	-	-	-	-	-	-		159,563
Malm Gulch	9,365	2,815	13,569	25,749	-	17,773	19,026	36,799		8,424
Totals	1,335,203	5,781,506	3,220,541	10,337,250	176,857	1,292,480	233,551	1,702,888		2,698,967

TABLE 2-4

PRESENT TOTAL BIOMASS PRODUCTION IN POUNDS OF VEGETATION BY ECOLOGICAL SITE FOR EACH ALLOTMENT

(cont.)

	Riparian Zone				Burn	TOTAL
Allotment	Good	Fair	Poor	Total		
Red Lake	-	-	-	-	-	8,980,821
Herd Creek	-	-	-	-	-	10,123,038
Road Creek	-	-	-	-	-	6,004,561
Bruno Creek	-	-	-	-	-	1,009,762
Round Valley	-	-	-	-	-	4,481,420
San Pelipe	-	-	-	-	-	31,498,126
Warm Springs	-	-	-	-	-	22,961,630
Garden Creek	-	-	17,343	17,343	-	10,786,678
Bald Mountain	18,960	14,835	4,112	37,907	25,633	7,061,789
Thompson Creek	-	-	8,742	8,742	-	2,109,136
Split Hoof	-	-	21,690	21,690	-	3,017,488
Squaw Creek	45,840	-	-	45,840	-	2,220,606
Spud Creek	-	-	5,288	5,288	-	2,845,777
Pine Creek	-	-	-	-	-	2,412,855
East Fork	-	-	26,766	26,766	-	4,354,434
Sullivan Creek	-	-	-	-	-	1,233,765
Hale Gulch	-	-	-	-	-	3,218,512
Totals	64,800	14,835	83,941	163,576	25,633	124,320,398

TABLE 2-5

VEGETATION STRUCTURE
WITHIN EACH BROAD VEGETATION TYPE

Vegetation Type	Condition	Percent Composition (by weight)* Grass	Forbs	Shrubs
Basin Big Sagebrush	Good	55	10	35
	Fair	26	0	74
	Poor	9	13	78
Wyoming Big Sagebrush	Good	49	28	23
	Fair	26	34	40
	Poor	8	29	63
Mountain Big Sagebrush	Good	56	19	25
	Fair	30	19	51
	Poor	20	35	45
Gray Low Sagebrush	Good	25	42	33
	Fair	31	36	33
	Poor	15	37	48
Black Sagebrush	Good	42	13	45
	Fair	18	34	48
	Poor	18	34	48
Three-tip Sagebrush	Good	38	29	33
	Fair	30	30	40
	Poor	17	58	25
Mountain Mahogany	Good	29	18	53
	Fair	24	25	51
	Poor	22	12	66
Shadscale Saltbrush	Good	50	1	49
	Fair	29	13	58
	Poor	9	0	91
Nuttall Saltbrush	Good	23	6	71
	Fair	10	0	90
	Poor	4	0	96
Nuttall Tansy	Good	36	36	28
	Fair	13	63	24
	Poor	12	60	28
Semi-wet Meadow	Good	70	21	9
	Fair	73	24	2
	Poor	25	23	52
Semi-wet Stream Bottom	Good	62	24	14
	Fair	63	25	12
	Poor	42	21	37
Douglas Fir	--	36	52	12

*These percentages were found by averaging the data from the plant data vegetation samples and/or condition write-ups (see Appendix 2-A). Where two condition classes in a vegetation type have roughly the same percent composition, there is a difference either in total production or in species composition.

TABLE 2-6

PRESENT AND POTENTIAL AUM PRODUCTION FOR
SPRING USE AND SUMMER USE TABULATED BY ALLOTMENT (AUMs) 1/

Allotment	Present Total AUMs		Potential Total AUMs 2/	
	Spring	Summer	Spring	Summer
Red Lake	1,977	1,994	2,454	3,095
Herd Creek	2,565	3,520	2,678	4,003
Road Creek	1,512	1,803	1,600	2,227
Bruno Creek	250	373	246	421
Round Valley	873	828	1,001	1,136
San Felipe	8,035	9,132	10,118	14,214
Warm Springs	5,464	5,737	6,821	8,978
Garden Creek	2,717	2,987	3,040	4,200
Bald Mountain	1,760	2,075	2,007	2,987
Thompson Creek	521	692	591	940
Split Hoof	720	786	796	1,078
Squaw Creek	509	647	743	1,211
Spud Creek	696	803	773	1,075
Pine Creek	609	758	658	955
East Fork	1,086	1,279	1,330	2,071
Sullivan Creek	328	432	366	565
Malm Gulch	675	771	769	991
Total	30,297	34,617	35,991	50,147

1/ Figures are based on proper use of forage plants. This is a level of use that meets the physiological needs of the key vegetation species. The AUM production data applies strictly to those AUMs available for livestock. Data is presented separately for spring grazing and summer grazing to show how many additional AUMs could be allocated if grazing occurred during the summer season instead of during the spring. Fewer AUMs can be allowed under spring grazing than under summer grazing because spring grazing is more detrimental to the vegetation and total forage production has not occurred yet. Methodology is explained in Appendix 2-A and 2-F.

2/ Potentials are based on forage production for each vegetation type at a "good" condition class.

TABLE 2-7

PRESENT VEGETATION CONDITION BY ALLOTMENT
(Public Acres)

Allotment	Good	Fair	Poor	Douglas Fir, Burned Areas, and Rock	Total
Red Lake	2,186	9,217	8,251	3,541	23,195
Herd Creek	8,292	6,637	2,138	4,983	22,050
Road Creek	1,800	9,430	2,250	2,085	15,565
Bruno Creek	494	537	76	1,271	2,378
Round Valley	6,010	3,978	2,596	919	13,503
San Felipe	3,370	32,272	39,267	6,407	81,316
Warm Springs	5,063	36,513	15,839	2,288	59,703
Garden Creek	699	16,726	8,988	4,045	30,458
Bald Mountain	327	5,977	7,507	8,726	22,597
Thompson Creek	276	2,119	785	2,415	5,595
Split Hoof	-	5,153	2,759	503	8,415
Squaw Creek	760	1,036	2,651	2,597	7,044
Spud Creek	307	3,568	2,797	2,184	8,856
Pine Creek	-	3,903	559	564	5,026
East Fork	61	4,861	4,384	2,409	11,715
Sullivan Creek	4	1,383	512	1,671	3,570
Malm Gulch	4,166	2,130	2,208	692	9,136
Totals	33,815	145,440	103,567	47,300	330,122

TABLE 2-8

APPARENT TREND BY ALLOTMENT (FEDERAL)
(Public Acres)

Allotment	Up	Down	Static	Doug Fir Burn & Rock	Total
Red Lake	0	3,630	16,024	3,541	23,195
Herd Creek	0	570	16,497	4,983	22,050
Road Creek	0	4,789	8,691	2,085	15,565
Bruno Creek	0	0	1,107	1,271	2,378
Round Valley	0	0	12,614	919	13,503
San Felipe	3,960	24,500	46,449	6,407	81,316
Warm Springs	0	23,450	33,965	2,288	59,703
Garden Creek	0	6,970	19,443	4,045	30,458
Bald Mountain	3,670	2,630	7,511	8,726	22,597
Thompson Creek	2,020	520	640	2,415	5,595
Split Hoof	0	2,600	5,312	503	8,415
Squaw Creek	0	650	3,797	2,597	7,044
Spud Creek	620	0	6,052	2,184	8,856
Pine Creek	0	0	4,462	564	5,026
East Fork	2,520	0	6,786	2,404	11,715
Sullivan Creek	0	1,648	250	1,672	3,570
Malm Gulch	0	1,020	7,425	691	9,136
Totals	12,790	72,977	197,055	47,300	330,122

TABLE 2-9

LIVESTOCK USE LEVELS

Allotment	Present Use (8-Year Average)	Proposed Use 1/	Percent Change
Red Lake	1,062	613	-42
Herd Creek	1,188	1,411	+19
Road Creek	548	346	-37
Bruno Creek	127	85	-33
Round Valley	363	438	+21
San Felipe/ Peck Canyon	7,393	3,484	-53
Warm Springs	3,507	2,201	-37
Garden Creek	876	600	-32
Bald Mountain	614	296	-52
Thompson Creek	126	51	-60
Split Hoof	204	118	-42
Squaw Creek	444	133	-70
Spud Creek	240	202	-16
Pine Creek	179	181	+ 1
East Fork	492	192	-61
Sullivan Creek	81	85	+ 5
	17,444	10,436	-40

1/ These figures are based on a soils/vegetation inventory conducted in 1977.

TABLE 2-10

APPARENT TREND BY VEGETATION TYPE AND ALLOTMENT 1/

Allotment	Vegetation Type	Up	Down	Static	Total	Remarks
Red Lake	ARTRW		1,565	4,508	6,073	
	ATCO		1,985	1,391	3,376	
	ARARN		80	3,590	3,670	
	PSME			1,709	1,709	
	ARTRT			97	97	
	ARTRV			2,943	2,943	
	ARTR4			1,795	1,795	
	TANU			1,440	1,440	
	CELE4			138	138	
	ATNU			122	122	
	Rock				1,832	
Total		0	3,630	17,733	23,195	
Herd Creek	ARTRV		570	10,524	11,094	
	ARTRT			15	15	
	ARTRW			3,702	3,702	
	ARARA			300	300	
	ARTR4			716	716	
	ATCO			1,008	1,008	
	TANU			93	93	
	Wet Meadow			139	139	
	PSME			2,240	2,240	
	Rock				2,743	
Total		0	570	18,737	22,050	
Road Creek	ARTRT		130	13	143	
	ARTRW		4,250	4,448	8,698	
	ATCO		409		409	
	ARTRV			2,885	2,885	
	ARARA			31	31	
	ARTR4			1,267	1,267	
	Wet Meadow			47	47	
	PSME			101	101	
	Rock				1,984	
Total		0	4,789	8,792	15,565	
Bruno Creek	PSME	50		1,151	1,201	
	ARTRW			82	82	
	ARTRV			1,025	1,025	
	Rock				70	
Total		50	0	2,258	2,378	
Round Valley	ARTRT			196	196	
	ARTRW			4,338	4,338	
	ARTRV			114	114	
	ARTR4			14	14	
	ATCO			7,903	7,903	
	ATNU			20	20	
	PSME			8	8	
	Rock				910	
Total		0	0	12,593	13,503	
San Felipe	ARARN	1,670		3,420	5,090	Includes 10 ac. of a seeding.
	ARTR4	1,250	2,010	3,230	6,490	Includes 2 ac. of a seeding.
	ARTRV	520	2,840	19,184	22,544	
	CELE4	340		2,498	2,838	
	PSME	780	500	3,035	4,315	
	ARTRW	140	12,230	11,167	23,537	Includes 2,270 ac. of a seeding.
	Wet Meadow	40		141	181	
	TANU		5,550	4,063	9,613	
	ATCO		1,450	453	1,903	
	ARTRT		420	312	732	Includes 17 ac. of a seeding.
	ARARA			526	526	
	ATNU			1,454	1,454	Includes 818 ac. of a seeding.
	Rock				2,093	
Total		4,740	25,000	49,483	81,316	

TABLE 2-10 (Continued)

APPARENT TREND BY VEGETATION TYPE AND ALLOTMENT

Allotment	Vegetation Type	Up	Down	Static	Total	Remarks
Warm Springs	ARTRW		11,000	10,350	21,350	
	ARTRT		260	613	873	
	CELE4		530	417	947	
	ARTRV		1,810	8,824	10,634	
	ARTR4		670	4,395	5,065	
	ATNU		300	29	329	
	ATCO		7,390	7,128	14,518	
	ARARN		1,490	1,215	2,705	
	ARARA			584	584	
	TANU			382	382	
	Wet Meadow			28	28	
	PSME			628	628	
	Rock				1,660	
Total		0	23,450	34,593	59,703	
Garden Creek	ARTRW		5,710	11,927	17,637	
	ARTRV		930	1,942	2,872	
	ARTR4		330	3,361	3,691	
	ARARN			18	18	
	ATCO			2,115	2,115	
	TANU			6	6	
	Riparian Zones			74	74	
	PSME			1,907	1,907	
	Rock				2,138	
Total		0	6,970	21,350	30,458	
Bald Mountain	ARTRW	2,880	2,040	2,003	6,923	
	ARTRV	790	190	3,069	4,049	
	ARTR4		400	1,849	2,249	
	PSME	2,610		2,030	4,640	
	ARARN			157	157	
	CELE4			51	51	
	ATCO			310	310	
	ATNU			8	8	
	Semi-wet Stream Bottom			64	64	
	Rock				3,957	
	Burn				189	
Total		6,280	2,630	9,541	22,597	
Thompson Creek	ARTRW	210	165	170	545	
	ARTRV	1,800	355	443	2,598	
	PSME	630		810	1,440	
	Semi-wet Stream Bottom	10		27	37	
	Rock				975	
Total		2,650	520	1,450	5,595	
Split Hoof	ARTRW		2,600	3,861	6,461	
	ARTRV			294	294	
	ARARN			7	7	
	ARTR4			509	509	
	ATCO			465	465	
	TANU			84	84	
	Semi-wet Stream Bottom			92	92	
	Rock				503	
Total		0	2,600	5,312	8,415	
Squaw Creek	ARTRW		650	749	1,399	
	ARTRV			2,652	2,652	
	ARARA			339	339	
	Semi-wet Stream Bottom			57	57	
	PSME			931	931	
	Rock				1,671	
Total		0	650	4,728	7,044	

TABLE 2-10

APPARENT TREND BY VEGETATION TYPE AND ALLOTMENT

Allotment	Vegetation Type	Up	Down	Static	Total	Remarks
Spud Creek	ARTRW	620		4,171	4,791	
	PSME	470		371	841	
	ARTRV			848	848	
	ARTR4			824	824	
	ATCO			186	186	
	Semi-wet Stream Bottom			23	23	
	Rock				1,343	
Total		1,090	0	6,423	8,856	
Pine Creek	ARTRW			1,345	1,345	
	ARTRV			2,391	2,391	
	ARARA			238	238	
	ARTR4			482	482	
	TANU			6	6	
	PSME			205	205	
	Rock				359	
Total		0	0	4,667	5,026	
East Fork	ARTRW	1,110		3,396	4,506	
	ARTRV	1,410		2,798	4,208	
	PSME	250		676	926	
	ARARA			64	64	
	ARTR4			187	187	
	ATCO			226	226	
	ATNU			1	1	
	Semi-wet Stream Bottom			114	114	
	Rock				1,486	
Total		2,770	0	7,462	11,715	
Sullivan Creek	ARTRV		1,648		1,648	
	PSME		170	1,161	1,331	
	ARTRW			220	220	
	TANU			1	1	
	Semi-wet Meadow			29	29	
	Rock				341	
Total		0	1,818	1,411	3,570	
Malm Gulch	ARARN		650	14	664	
	ARTRW		270	6,271	6,541	
	CELE4		100	12	112	
	ARTRT			240	240	
	ARTR4			44	44	
	ARTRV			122	122	
	ATCO			490	490	
	TANU			232	232	
	PSME			70	70	
	Rock				621	
Total		0	1,020	7,495	9,136	

TABLE 2-11

NAMES AND SYMBOLS FOR MOST
COMMON OCCURRING VEGETATION SPECIES

Species Name	Abbreviation	Common Name
Grasses		
Agropyron trachycaulum	AGTR	Slender wheatgrass
Agropyron spicatum	AGSP	Bluebunch wheatgrass
Agropyron dasystacium	AGDA	Thickspike wheatgrass
Agropyron cristatum	AGCR	Crested wheatgrass
Agropyron smithii	AGSM	Western wheatgrass
Poa pratensis	POPR	Kentucky bluegrass
Poa Secunda	POSE	Sandberg bluegrass
Festuca idahoensis	FEID	Idaho fescue
Calamagrostis rubescens	CARU	Pinegrass
Stipa comata	STCO	Needle and threadgrass
Sporobolus cryptandrus	SPCR	Sand dropseed
Oryzopsis hymenoides	ORHY	Indian rice grass
Sitanion hystrix	SIHY	Bottlebrush squirreltail
Carex (several species present)	--	Sedge
Shrubs		
Artemesia tridentata wyomingensis	ARTRW	Wyoming big sagebrush
Artemesia tridentata vaseyana	ARTRV	Mountain big sagebrush
Artemesia tridentata tridentata	ARTRT	Basin big sagebrush
Artemesia arbuscuia	ARAR8	Low sagebrush
Artemesia arbuscula nova	ARARN	Black sagebrush
Artemesia tripartita	ARTR4	Threetip sagebrush
Atriplex confertifolia	ATCO	Shadscale
Atriplex nuttallii	ATNU	Nuttall saltbrush
Tanacetum nuttallii	TANU	Chicken sage
Rose (several species present)	--	Rose
Ribes (several species present)	--	Currant
Trees		
Cercocarpus ledifolius	CELE3	Mountain mahogany
Pseudotsuga menziesii	PSME	Rocky mountain douglas fir
Populus Spp.	--	Cottonwood
Betula Spp.	--	Birch
Alnus Spp.	--	Alder

Threatened and Endangered Plants

The complex geologic history of east-central Idaho has contributed to an equally complex floral community. Several species are native (endemic) to the area and are not found elsewhere. Other species common in other areas have isolated populations thriving in the Challis area (disjunct). T&E species are of particular concern because they could not be reestablished if eliminated.

Public Law 93205, the Endangered Species Act of 1973, provides for protection of T&E plants. Criteria set forth in P.L. 93205 describe an endangered species as one considered to be in danger of extinction throughout all or a significant portion of its range. Threatened species are considered those which may become endangered in the forseeable future. Lists of such plants were published in the Federal Register on July 1, 1975, and again on June 16, 1976. In addition several Idaho botanists have compiled lists of plants they consider as being, if not endangered, at least rare or uncommon.

Table 2-12 is a composite of the various species that were given special attention during the 1976 vegetation/soils inventory completed by BLM personnel and includes species from both federal and local lists.

Many species were not identified during the field inventory but this in no way indicates that they were not present in the unit. Those that were identified appear to be somewhat more widespread within the unit than previously estimated.

TABLE 2-12

SENSITIVE SPECIES WITHIN THE CHALLIS ES AREA

Common Name	Scientific Name	Federal Standing	State Standing	Endemic or Disjunct	Known General Location
Idaho thelopody	Thelopodium repandum	E	E	E	Bayhorse Creek, Herd Creek, Wood Creek, Spur Canyon, Road Creek, Hole-in-Rock, Bear Wallow, Malm Gulch
Salmon River crazyweed	Oxytropis besseyi salmonensis	-	E	E	Malm Gulch, Red Lake
Custer milkvetch	Astragalus amnsi-amissi	E	E	E	Not located
Lost River silene	Silene scaposa lobate	T	T	D	Not located
Idaho bladderpod	Lesquerella carinata	T	Remove from threatened list	D	Not located
Everman duskymaiden	Chaenactis evermannii	T	Remove from threatened list	D	Not located
Idaho hymenopappus	Hymenopappus filifolius idahoensis	T	T	E	Not located
Swallen ricegrass	Oryzopsis swallenii	-	T	E	Antelope Flat, Little Lost Birch Creek
Salmon River cryptantha	Cryptantha salmonensis	_	T	E	Not located
Salmon milkvetch	Astragalus vexcilliflexus rubilus	T	T	E	Not located
Salmon River rabbit-brush	Chrysothamnus parryi	-	-	D	Not located
Salmon wildrye	Elymus ambiguus salmonis	-	-	E	Round Valley, Garden Creek, Red Lake, Malm Gulch - Rather widespread

Note: Columns 3 and 4: E - endangered, T -threatened

Sources: Plant Names: Idaho Plant List, UDSA, Soil Conservation Service, April 5, 1976
Federal Standings: Endangered and Threatened Plants of Idaho, Henderson, D.M., F.D. Johnson, P. Packard and R. Steele; University of Idaho Press, June 1977.
State Standings: Research Natural Area Needs in Idaho, Wellner, C.A., and F.D. Johnson, University of Idaho, December, 1974.

Description

The soils in the Challis Unit are quite varied due to the complex geology and rather wide range in climate and elevation. They often occur in an intricate pattern on the landscape and are mapped as soil complexes, associations and occasionally, as consociations.

A third order soil survey was conducted during 1977 by Soil Conservation Service (SCS) and Bureau of Land Management (BLM) personnel to determine the distribution and kinds of potential vegetation and soils in the Challis area. The survey was conducted in accordance with the policies and procedures in the SCS National Soils Handbook and related SCS soils memoranda. The soils were mapped on color aerial photos at a scale of 1:15,840. From this survey a General Soil Map (Map 2-5) was designed to show the distribution of the major soil groups in the Challis Unit. Each of the major soil groups or map units has its own distinctive pattern of soils and landscape features. Normally each map unit consists of one or more soils of major extent and inclusions of soils of minor extent. The extent of each map unit is shown in Appendix 3-D.

Based on interpretations of SCS and BLM soil scientists, a summary of soil properties for the dominant soils is given in Appendix 3-C. Potential production for the major soils is shown on Table 2-13 in the vegetation section. This information was developed by range conservationists during the 1977 inventory mentioned above.

Sediment Yield

Sediment yields were estimated using the Pacific Southwest Interagency Committee (PSIAC) method outlined in BLM Manual 7317, Appendix 2, as modified by BLM's Denver Service Center. These estimates are detailed in Tables 2-14 and 2-15, and methodology in Appendix 3-B.

The highest per acre sediment yield is from the burned area, where ground cover is sparse. Total volume, however, is greatest from the Wyoming big sagebrush and mountain big sagebrush types, which together produce almost 70 percent of the total sediment.

Table 2-16 shows approximate sediment yield that would occur with no disturbance, and maximum possible plant and litter cover. The excess, or accelerated erosion above these levels, is the result of reduced ground cover and surface disturbance by grazing animals and other agents.

Presently the total sediment yield from the unit is 436,628 tons. Estimated geologic erosion is 150,078 tons, which indicates 286,550 tons of sediment is a result of all the uses made on the land that reduce vegetation cover and disturb the soil.

TABLE 2-13

VEGETATION SOIL RELATIONSHIPS

Vegetation Type	Soils		Potential production (lb/ac air dry) 1/		
	Series and Phase	Classification	Favorable Years 2/	Median Years 2/	Unfavorable Years 2/
Shadscale	Flagton saline	Xerollic Calciorthid, loamy - skeletal, mixed, frigid, shallow	350	200	75
	Challis	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	600	350	200
Nuttall saltbush	Challis saline	Durixerollic Calciorthid, loamy-skeletal, mixed, frigid	650	400	300
Nuttall Tansy	Allhands dry	Haploxerollic Durorthid, loamy - skeletal, mixed, frigid, shallow	300	150	75
Wyoming big sagebrush	Flagton dry	Xerollic Calciorthid, loamy - skeletal, mixed, frigid, shallow	500	300	175
	Gradco dry	Xerollic Camborthid, loamy-skeletal, mixed, frigid			
Basin big sagebrush	Challis wet	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	1,200	700	400
Wyoming big sagebrush	Challis moist	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	600	300	175
	Venum	Durixerollic Haplargid, clayey - skeletal, montmorillonitic, frigid			
	Levzig	Durixerollic Haplargid, loamy - skeletal, mixed frigid			
	Jonda	Mollic Cryoboralf, loamy - skeletal, mixed	800	450	300
	Reck dry	Mollic Cryoboralf, clayey-skeletal, montmorillonitic			
	Pecture	Typic Xerochrept, loamy - skeletal, mixed, frigid			
	Katz	Lithic Xerochrept, loamy, mixed, frigid			
	Brabas	Mollic Cryoboralf, fine, montmorillonitic			
Black sagebrush	Nitchly	Typic Cryochrept, loamy - skeletal, carbonatic	700	400	300
	Instalay	Haploxerollic Durorthid, loamy - skeletal, mixed, frigid			
Nuttall Tansy	Unnamed	Typic Cryochrept, loamy - skeletal, mixed	450	300	100
Basin big sagebrush	Unnamed	Xeric Torrifluvent	1,000	600	400

TABLE 2-13 (cont.)

VEGETATION SOIL RELATIONSHIPS

Vegetation Type	Soils		Potential production (lb/ac air dry) 1/		
	Series and Phase	Classification	Favorable Years 2/	Median Years 2/	Unfavorable Years 2/
Mountain mahogany	Konian dry	Calcic Pachic Cryoboroll, loamy - skeletal, mixed	500	300	150
Low sagebrush	Reck moist	Mollic Cryoboralf, clayey - skeletal, montmorillonitic	700	400	250
Three-tip sagebrush	Zeebar dry	Argic Cryoboroll, loamy - skeletal, mixed	900	500	300
	Zeale moist	Calcic Cryoboroll, loamy - skeletal, mixed			
	Sink	Typic Argixeroll, loamy - skeletal, mixed, frigid			
	Hoskin	Typic Argixeroll, loamy-skeletal, mixed, frigid			
Mountian big sagebrush	Sleep	Argic Cryoboroll, clayey - skeletal, montmorillonitic	1,000	600	350
	Stupile	Argic Cryoboroll, loamy - skeletal, mixed			
	Vaysa	Argic Pachic Cryoboroll, loamy - skeletal, mixed			
Mountain mahogany	Konian	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	600	400	200
Mountain big sagebrush	Vaysa moist	Argic Pachic Cryoboroll, loamy-skeletal, mixed	1,500	800	500
	Hamtah	Argic Pachic Cryoboroll, clayey-skeletal, montmorillonitic			
	Meeger	Calcic Pachic Cryoboroll, loamy-skeletal, mixed			
Douglas Fir	Lopine	Typic Cryochrept, loamy-skeletal, mixed			
	Konian moist	Calcic Pachic Cryoboroll, loamy-skeletal, mixed			
Wet meadow	Unnamed	Aquic Cryoboroll	3,000	2,000	1,400
Riparian	Unnamed	Typic Cryoboroll	1,200	800	500

1/ More information about production may be obtained from ecological site descriptions at the Salmon District office of the BLM.

2/ Favorable, median, and unfavorable years of production indicate the average production in years of above average, average, and below average precipitation, respectively.

TABLE 2-14

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT

Allotment	Acres	Total Sediment (Tons)	Average Tons/Acre
Red Lake	23,195	24,427	1.05
Herd Creek	22,050	31,576	1.43
Road Creek	15,565	22,477	1.44
Bruno Creek	2,378	2,404	1.01
Round Valley	13,503	18,005	1.33
San Felipe	81,316	110,549	1.36
Warm Springs	59,703	89,703	1.50
Garden Creek	30,458	40,325	1.32
Bald Mountain	22,597	22,046	0.98
Thompson Creek	5,595	6,850	1.22
Split Hoof	8,415	11,538	1.37
Squaw Creek	7,044	6,133	0.87
Spud Creek	8,856	10,439	1.18
Pine Creek	5,026	7,043	1.40
East Fork	11,715	18,619	1.59
Sullivan Creek	3,570	3,287	0.92
Malm Gulch	9,136	11,207	1.23
Total	330,122	436,628	1.32

TABLE 2-15

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE

Allotment	Basin Big Sagebrush (ARTRT)			Wyoming Big Sagebrush (ARTRW)			Mountain Big Sagebrush (ARTRV)			Gray Low Sagebrush (ARARA)		
	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.22	97	118	1.33	6,073	8,077	1.16	2,943	3,414			
Herd Creek	.97	15	15	1.83	3,702	6,775	1.68	11,094	18,638	1.62	300	486
Road Creek	1.16	143	166	1.74	8,698	15,135	1.45	2,885	4,183	1.39	31	43
Bruno Creek				1.89	82	155	1.28	1,025	1,312			
Round Valley	.93	196	182	1.54	4,337	6,679	.97	114	111			
San Felipe	1.51	732	1,105	1.45	739	1,072	1.28	35	45			
" "				1.68	22,798	38,301	1.54	22,509	34,664	1.54	526	810
Warm Springs	1.04	873	908	1.60	8,173	13,077	1.54	360	554	1.51	180	272
" "				1.74	6,259	10,891	1.68	440	739	1.60	404	646
" "				1.97	5,413	10,664	1.83	4,834	8,846			
" "				2.12	1,505	3,191	1.45	5,000	7,250			
Garden Creek				1.54	17,637	27,161	1.09	2,872	3,130			
Bald Mountain				1.74	6,923	12,046	.52	4,049	2,105			
Thompson Creek				2.03	545	1,106	1.74	2,598	4,521			
Split Hoof				1.45	6,461	9,368	1.16	294	341			
Squaw Creek				1.10	1,399	1,539	1.33	2,652	3,527	1.45	339	492
Spud Creek				1.74	4,791	8,336	.93	848	789			
Pine Creek				2.03	1,345	2,730	1.28	2,391	3,061	1.51	238	359
East Fork				2.47	4,506	11,130	1.39	2,995	4,163	1.51	64	97
" "							1.33	1,213	1,613			
Sullivan Creek				1.62	220	356	1.33	1,648	2,192			
Malm Gulch	1.10	240	264	1.45	10	15	1.54	122	188			
" "				1.33	6,531	8,686						
Total		2,296	2,758		118,147	196,490		72,921	105,386		2,082	3,205
Average, Tons/Acre	1.20			1.66			1.45			1.54		

TABLE 2-15

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE (cont.)

Allotment	Nuttall Saltbush (ATNU)			Nuttall Tansy (half-shrub)			Wet Meadow			Riparian		
	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.51	122	184	.70	1,440	1,008						
Herd Creek				.93	93	87	1.45	139	202			
Road Creek							1.33	10	13			
" "							1.45	37	54			
Round Valley	1.51	20	30									
San Felipe	1.83	1,454	2,661	.81	6,840	5,540	.87	181	157			
" "				.97	2,773	2,690						
Warm Springs	1.22	329	401	.97	382	371	1.54	28	43			
Garden Creek				.81	6	5				.97	74	72
Bald Mountain	1.60	8	13							1.33	64	85
Thompson Creek										1.54	37	57
Split Hoof				.70	84	59				.74	92	68
Squaw Creek										.62	57	35
Spud Creek										.87	23	20
Pine Creek				1.16	6	7						
East Fork	1.89	1	2							2.38	114	271
Sullivan Creek				1.09	1	1				2.03	29	59
Malm Gulch				.97	232	225						
Total		1,934	3,291		11,857	9,993		395	469		490	667
Average, Tons/Acre	1.70			0.84			1.19			1.36		

TABLE 2-15

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE (cont.)

Allotment	Black Sagebrush (ARARN)			Three-tip Sagebrush (ARTR 4)			Mountain Mahogany (CELE 3)			Shadscale (ATCO)		
	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.22	3,670	4,477	1.16	1,795	2,082	1.16	138	160	1.16	3,376	3,916
Herd Creek				1.62	716	1,160				2.38	1,008	2,399
Road Creek				1.33	1,267	1,685				2.76	409	1,129
Round Valley				1.02	14	14				1.39	7,903	10,985
San Felipe	.93	2,763	2,570	1.51	6,490	9,800	1.33	2,838	3,775	.90	1,103	993
" "	1.10	2,327	2,560							1.09	800	872
Warm Springs	1.16	1,860	2,157	1.51	3,480	5,255	1.04	320	333	1.39	9,679	13,454
" "	1.45	230	334	1.60	50	80	.93	627	583	1.33	4,839	6,436
" "	1.28	615	787	1.33	1,535	2,042						
Garden Creek	1.33	18	24	1.54	3,691	5,684				1.45	2,115	3,067
Bald Mountain	1.74	157	273	1.28	2,249	2,879	2.52	51	129	2.18	310	676
Split Hoof	1.16	7	8	1.39	509	708				2.12	465	986
Spud Creek				.70	824	577				1.28	186	238
Pine Creek				1.54	482	742						
East Fork				1.60	187	299				2.12	226	479
Malm Gulch	1.51	664	1,003	1.33	44	59	1.74	112	195	1.09	490	534
Total		12,311	14,193		23,333	33,066		4,086	5,175		32,909	46,164
Average, Tons/Acre	1.15			1.42			1.27			1.40		

TABLE 2-15

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE (cont.)

Allotment	Douglas Fir (PSME) Tons/Acre	Acres	Total	Burn Tons/Acre	Acres	Total	Rock Acres
Red Lake	.58	1,709	991				1,832
Herd Creek	.81	2,240	1,814				2,743
Road Creek	.68	101	69				1,984
Bruno Creek	.78	1,201	937				70
Round Valley	.54	8	4				911
San Felipe	.68	4,315	2,934				2,093
Warm Springs	.62	628	389				1,660
Garden Creek	.62	1,907	1,182				2,138
Bald Mountain	.68	4,640	3,155	3.57	189	675	3,957
Thompson Creek	.81	1,440	1,166				975
Split Hoof							503
Squaw Creek	.58	931	540				1,671
Spud Creek	.57	841	479				1,343
Pine Creek	.70	205	144				359
East Fork	.61	926	565				1,486
Sullivan Creek	.51	1,331	679				341
Malm Gulch	.54	70	38				621
Total		22,493	15,086		189	675	24,687
Average, Tons/Acre	0.67			3.57			

TABLE 2-16

ESTIMATED GEOLOGIC EROSION (SEDIMENT YIELD) OF UNDISTURBED RANGE WITH MAXIMUM POTENTIAL COVER

Vegetation Type	Sediment Yield Tons/Acre	Acres	Sediment Tons
Basin Big Sagebrush (ARTRT)	.35	2,298	804
Wyoming Big Sagebrush (ARTRW)	.49	118,151	57,894
Mountain Big Sagebrush (ARTRV)	.46	72,920	33,543
Gray Low Sagebrush (ARARA)	.65	2,081	1,353
Black Sagebrush (ARARN)	.54	12,312	6,649
Three-tip Sagebrush (ARTR4)	.49	23,332	11,433
Mountain Mahogany (CELE 3)	.44	4,085	1,797
Shadscale (ATCO)	.61	32,909	20,075
Nuttall Saltbush (ATNU)	.61	1,934	1,180
Nuttall Tansy (Half-shrub)	.44	11,857	5,217
Wet Meadow & Stream Bottom	.29	424	123
Riparian	.00	519	0
Douglas Fir (PSME)	.44	22,492	9,897
Burn	.60	189	113
Rock	.00	24,619	0
Total		330,122	150,078

Terrestrial

General. Each of the 13 vegetation types (Map 2-1) within the Challis ES Unit is comprised of several plant communities. Each plant community and its successional stages produce a number of habitats, each supporting a unique animal community. Combination and arrangement of habitats in the Challis ES Area determine which animals utilize the plant communities. The greater the plant community diversity, the greater the diversity of wildlife species (refer to Appendices 4-A, 4-B and 4-C).

There are 291 terrestrial wildlife species (72 mammals, 204 birds, 15 amphibians and reptiles) in the Challis ES Area. A list of species, their habitat relationships, relative abundance, and season of occurrence is presented in Appendices 4-A, 4-B and 4-C.

Discussion on terrestrial wildlife is directed toward threatened, endangered and sensitive species, game animals and groups of animals with similar life forms on which the proposed action would have significant impacts.

Specific.

Endangered Wildlife. The American peregrine falcon and the bald eagle occur in the Challis ES Area and are officially classified as endangered species. The Bureau of Land Management and the U.S. Fish and Wildlife Service, through informal consultation, have determined that the proposed action would have little or no effect on either species and would not likely jeopardize the continued existence of listed species or result in the destruction or adverse modification of their habitat. Therefore, no further discussion on T&E wildlife appears in this document.

Sensitive Wildlife. Animals occurring in the ES Area, jointly classified as sensitive by the Bureau of Land Management and Idaho Department of Fish and Game (IDFG), whose populations are consistently small and widely dispersed, or ranges restricted to a few localities, or numbers declining so rapidly that official listing as endangered or threatened may become necessary as a conservative measure are: river otter, long-billed curlew, bobcat, Canada lynx, osprey and pigeon hawk. District wildlife biologists have determined that the proposed action would not significantly affect any sensitive species, jeopardize their continued existence or result in the destruction or adversely modify their habitat. Therefore, no further discussion on sensitive species appear in the document. Information on populations and areas of use in the ES Area can be obtained at the Salmon District BLM Office or the IDFG Office in Salmon, Idaho.

Big Game. Major big game animals occurring in the Challis ES Area are elk, deer, antelope, and bighorn sheep. Distribution of each species as well as their crucial habitat is shown on Maps 2-7, 2-8, 2-9 and 2-10. Table 2-17 shows the percent of big game habitat receiving livestock use. Estimated populations of big game occurring in each allotment is presented in Table 2-18. Population trends are up for deer and bighorn sheep and slightly up for elk. Antelope populations show downward trends on summer ranges and upward trends on winter ranges.

Estimated dietary composition by forage class and by season for each big game species is presented in Table 2-19 and present forage demand by species is in Table 2-20.

Big game habitat and habitat condition acreage by allotment is available in Tables 2-20 and 2-21, as well as season of use.

The extent of use and numbers of animals using big game habitat in the ES Area fluctuates annually. Fluctuations are mostly dependent on annual as well as seasonal weather conditions and habitat conditions on adjacent private and Forest Service lands as well as public domain.

Specific life requirements and site specific ecological interrelationships between big game and habitat components may be obtained at the Salmon District Office, BLM, or the Idaho Department of Fish and Game, Salmon, Idaho.

Upland Game. Upland game birds found in the Challis ES Area are listed in Table 2-18. Sage grouse, chukars and blue grouse are the most abundant species. Sage grouse and blue grouse habitat is shown on Map 2-11. Chukars are scattered throughout the ES Area in rough canyons and along the breaks and foothills of the Salmon and East Fork of the Salmon Rivers.

Of the 14,195 acres in the unit identified as important brood rearing or nesting habitat for sage grouse, 8,516 acres (60 percent) are classified as being in poor condition, and 5,676 acres (40 percent) are classified as being in fair condition. No areas are considered to be in good condition with respect to sage grouse habitat requirements. Of the 3,626 acres identified as important wintering areas, 913 acres (25.5 percent) are classified as being in fair condition and 2,713 acres (74.8 percent) are classified as being in good condition.

Quantity and quality of blue grouse habitat is generally fair to poor and showing static trend. Reduction of cover in riparian zones and wet meadows has decreased brood rearing and resting habitat for both blue grouse and sage grouse.

TABLE 2-17

PERCENT OF BIG GAME HABITAT
RECEIVING LIVESTOCK USE

ALLOTMENT	PERCENTAGE OF HABITAT RECEIVING LIVESTOCK USE							
	DEER	ACRES	ELK	ACRES	ANTELOPE	ACRES	BIG HORN	ACRES
Red Lake	35	2,474	--	--	50	9,041	--	--
Herd Creek	30	3,260	30	1,818	25	200	--	--
Road Creek	25	3,348	--	--	30	3,240	--	--
Bruno Creek	63	510	67	420	--	--	--	--
Round Valley	40	1,590	--	--	20	3,000	--	--
San Felipe	37	6,778	35	7,461	75	56,556	--	--
Warm Springs	10	743	--	--	73	44,681	--	--
Garden Creek	47	12,474	15	62	60	3,227	--	--
Pine Creek	47	2,362	--	--	--	--	--	--
Spud Creek	45	3,836	40	246	30	1,686	--	--
Split Hoof	35	3,199	--	--	20	1,460	--	--
Thompson Creek	--	--	--	--	--	--	--	--
Bald Mountain	23	2,992	--	--	--	--	--	--
Squaw Creek	35	2,139	54	1,213	--	--	--	--
East Fork	28	3,623	20	--	--	--	--	--
Sullivan Creek	--	--	--	8	--	--	--	--
		49,328		11,228		122,911		0

33% of Deer Habitat - 14% of ES Area
32% of Elk Habitat - 3% of ES Area
63% of Antelope Habitat - 35% of ES Area

TABLE 2-18

ESTIMATED NUMBERS OF GAME ANIMALS BY PROPOSED ALLOTMENT
IN THE CHALLIS ES AREA a/

Proposed Allotment	Deer 11/1-6/1	Elk 12/1-5/30	Antelope 11/1-4/1 4/1-10/30	Bighorn 11/1-6/1	Blue Grouse	Sage Grouse	Chukars
Red Lake	400		50/30		Few	Many	Few
Herd Creek	500	20	0/10		Many	Few	Few
Road Creek	425	2	0/55	18	Many	Many	Many
Bruno Creek	100	8			Many	None	None
Round Valley	50		115/40		None	Few	Many
San Felipe	187 b/	140	425/223		Many	Many	Few
Warm Springs	175		160/190		Many	Many	Many
Garden Creek	875	40	20/20	23	Few	Many	Many
Pine Creek	200				Many	Few	Few
Spud Creek	290	5	140/15	6	Many	Few	Many
Split Hoof	200		0/30		Few	Few	Few
Thompson Creek	200	19			Many	Few	Few
Bald Mountain	800	5			Many	Few	Many
Squaw Creek	400	18			Many	Few	Few
East Fork	300	5		40	Many	Few	Many
Sullivan Creek	150	5			Many	Few	Few
	5,252	267	910/613	87			

a/ Populations were estimated by the Idaho Department of Fish and Game. Populations and seasons of use fluctuate annually, dependent upon huntin regulations, weather conditions, and environmental variables and habitat condition existing on land other than those controlled by the BLM.

b/ Approximately 37 deer use this allotment as summer and fall habitat.

TABLE 2-19

ESTIMATED PERCENT OF FORAGE CONSUMPTION OF BIG GAME SPECIES IN THE CHALLIS ENVIRONMENTAL STATEMENT AREA

	Winter	Spring	Summer
Deer a/			
Browse	83%	47%	
Forbes	5%	7%	
Grass	12%	43%	
Elk b/			
Browse	16%	5%	
Forbes	34%	43%	
Grass	50%	51%	
Antelope c/			
Browse	90%	50%	55%
Forbes	5%	25%	40%
Grass	5%	25%	5%
Bighorn Sheep d/			
Browse	7%	3%	
Forbes	9%	3%	
Grass	84%	94%	

a/ Kvale (1975)
Wintinger (1978)
Lauer et. al. (1976)
Nicholson (1973)
Money (1974)
Moir (1976)

b/ Kvale (1975)
Wintinger (1978)

c/ Bernt (1976)

d/ Lauer et al., 1976

TABLE 2-20

BIG GAME HABITAT ACREAGE OCCURRING IN PROPOSED ALLOTMENTS: ACRES/PERCENT OF ALLOTMENT

Proposed Allotment	Deer 11/1-6/1		Elk 12/1-5/30		Bighorn 11/1-6/1		Antelope 11/1-4/1		4/1-10/30
	Normal	Crucial	Normal	Crucial	Normal	Crucial	Normal	Crucial	
Red Lake	7070/29						1933/5	900/4	16050/65
Herd Creek	10867/45	16010/24	6060/25						800/3
Road Creek	13390/80	3397/20	333/2		2159/13	585/4			10800/65
Bruno Creek	810/33		627/26						
Round Valley	3975/29						2850/21	1350/10	12150/90
San Felipe	a/18320/21	1404/2	21318/24	2291/3			7828/7	850/1	67580/79
Warm Springs	7427/12	751/1					4657/7	950/2	56550/90
Garden Creek	26540/84	8083/26	415/1		2631/8	1000/3	2689/8		2689/8
Pine Creek	5026/100	1785/36							
Spud Creek	7910/87	3629/40	614/7		569/6	297/3	820/9	400/4	4800/53
Split Hoof	9140/99	3366/36							7300/79
Thompson Creek	3540/61	448/8	1984/34						
Bald Mountain	13010/54	6942/29	230/1						
Squaw Creek	6110/74	1715/21	2246/27						
East Fork	12940/98	5312/40	40/<1		10639/80	3908/30			
Sullivan Creek	4020/94	1645/39	807/19						
Total Acres	150095	60261	34674	2291	15998	5790	20777	4450	178719

a/ 1290 acres used for summer and fall habitat.

TABLE 2-21

PRESENT ACRES OF BIG GAME HABITAT CONDITION IN THE CHALLIS ENVIRONMENTAL IMPACT STATEMENT AREA BY ALLOTMENT [A/]

Allotment	Mule Deer [B/] Habitat			Elk Habitat			Antelope Habitat [B/] (Winter)			Antelope Habitat (Summer)			Bighorn Sheep Habitat		
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	6,858		212				1,122	38	773	6,420	8,828	802			
Herd Creek	10,151	716		882	3,755	1,423				320	440	40			
Road Creek	13,390				333					4,320	5,940	540	237	1,922	
Bruno Creek	810			106	470	51									
Round Valley		2,942	1,033				1,083	1,482	285	4,860	6,683	607			
San Felipe	10,992		7,328	4,264	17,054		4,775	313	2,740	27,032	37,169	3,379			
Warm Springs	4,456	2,005	966				2,142	47	2,468	22,620	31,100	2,830			
Garden Creek	26,540			62	353		2,689			1,076	1,479	134	52	2,447	132
Pine Creek	3,820		1,206												
Spud Creek	7,910				614		820			1,920	2,640	240		569	
Split Hoof	9,140									2,920	4,015	365			
Thompson Creek	3,540			198	1,488	298									
Bald Mountain	12,100	260	650		127	103									
Squaw Creek	6,110			1,123	112	1,011									
East Fork	12,940			26	14								4,788	5,426	425
Sullivan Creek	40	2,974	1,006	89	629	89									
	128,797	8,897	12,401	6,750	24,949	2,975	12,631	1,880	6,266	71,488	98,294	8,937	5,077	10,364	557
Total Acres		150,095			34,674			20,777			178,719			15,998	
Percent of Total	86%	6%	8%	19%	72%	9%	61%	9%	30%	40%	55%	5%	32%	65%	3%

A/ Criteria for habitat condition classification may be found in Appendix 3-F.

B/ The winter of 1976-77 resulted in an increase of 18% in decadent sagebrush plants due to winter kill. This mortality was sufficient to place large acreages in poor condition. In fifteen years, natural replenishment of the kill will probably bring much of the area back to fair condition.

Non-Game.

Mammals. Seventy-two mammals occur in the Challis ES Area (Appendix 4-C), 82 percent of which are non-game species. All non-game species are directly or indirectly dependent on vegetation for either forage or cover. Approximately one-third of the non-game mammals compete directly with livestock because of dietary preferences for food items. The most valuable habitat to non-game mammals is the riparian and wet meadow zones. Sixty-nine percent of the non-game mammals use these areas for either feeding or reproduction activities. The habitat quality in these areas is presently in poor condition due to lack of forage and cover.

Birds. Two hundred four bird species exist in the Challis ES Area (Appendix 4-B) of which 90 percent are non-game birds. Approximately 84 percent of the non-game birds are dependent on terrestrial vegetation for food and cover. As with the non-game mammals, the riparian zones and wet meadows provide habitat for a large number of non-game birds. Thirty-one species are dependent upon ground vegetation for nesting cover and 53 species use shrubs or bushes for securing nests. Present use of vegetation by large herbivores inhibits opportunities for meeting the requirement of non-game birds for nesting, cover and forage.

Aquatic

Ten streams in the Challis Planning Unit have been identified in previous investigations (Bjornn and Falter, 1973; Mallet, 1974; Rabe et. al., 1975; USDI, BLM, 1971; and VTN Colorado, 1975) as spawning and/or rearing areas for either steelhead trout or chinook salmon. These streams are:

1. Salmon River
2. East Fork of Salmon River
3. Challis Creek
4. Thompson Creek
5. Squaw Creek
6. Herd Creek
7. Lake Creek
8. Big Lake Creek
9. Big Boulder Creek
10. Little Boulder Creek

A stream survey was conducted in 1977 to evaluate the anadromous fishery habitat in the Challis Planning Unit and determine measures required to protect this critical resource value. The East Fork and main Salmon Rivers were not surveyed; Bayhorse Creek was included in the survey since it probably harbors some steelhead.

Full survey reports are available from the Salmon District Office, BLM, and measures recommended to improve the fishery have been incorporated into management framework plans.

Fish Life Histories and Distribution in Challis Planning Unit.

Chinook salmon and steelhead are the most numerous anadromous fish in the Challis Planning Unit. A remnant run of about 250

sockeye salmon migrates through the unit enroute to Redfish Lake, located in the upper Salmon River drainage. A few Pacific lamprey still spawn in larger streams in the unit.

Resident cold-water game species, including rainbow trout, cutthroat trout, Dolly Varden, brook trout, and whitefish, comprise an important part of the fish fauna of the unit. The known occurrence of gamefish by stream is listed in Table 2-22.

Anadromous fish such as salmon, steelhead, and lampreys perform phenomenal biological feats during their life cycles. Young fish spawned in the Challis Planning Unit are reared in streams and rivers as long as three years before they migrate to the Pacific Ocean. After maturing one to three years in the ocean, the adults swim about 850 miles to their natal streams in the unit to complete their life cycles.

The most important anadromous fish habitats in the Challis Planning Unit are the Salmon and East Fork Rivers, Herd Creek, Squaw Creek, and Thompson Creek, respectively. Challis, Bayhorse, Lake, Big Lake, Big Boulder, and Little Boulder Creeks are used for spawning to a lesser extent (Map 2-12).

Both spring and summer chinook salmon spawn in the unit. The life histories of these two strains are essentially the same. Summer chinook use over 49 miles of the main Salmon and East Fork Rivers for spawning and rearing. During a ten-year period (1968-1977), Idaho Department of Fish and Game personnel found an annual average of 121 redds in the lower East Fork (East Fork mouth to 3.5 miles below Big Boulder Creek). Redds are conspicuous depressions dug into the stream substrate into which spawning fish deposit their eggs. Approximately 59 summer chinook redds are observed in the main Salmon River within the Challis Planning Unit each year (1968-1977).

Spring chinook spawn in the unit in the East Fork, Herd Creek, Big Boulder Creek, Little Boulder Creek, Thompson Creek, and Squaw Creek. The Idaho Department of Fish and Game counts spring salmon redds in the East Fork and Herd Creek but no estimates are available for the other streams. An average of 368 redds were counted in the upper East Fork (14 miles of river) from 1968 to 1977. About half (7 miles) of the upper East Fork is in the Challis Planning Unit, so about 184 spring chinook redds are attributable to the East Fork within the unit. Only the lower four miles of Herd Creek are checked for salmon redds. An average of 33 redds were observed in this stretch (1968-1977). An additional 3.4 miles of good spawning habitat exists in the unit above this point. It is estimated that 61 spring chinook redds would be

counted in Herd Creek within the Challis Planning Unit. This count probably approximates no more than one-half of the actual number of redds (Reingold, 1973) so about 122 salmon redds are constructed in Herd Creek annually.

Steelhead use the Salmon River for migration, rearing, and spawning. Salmon River tributaries that still produce steelhead include Challis, Bayhorse, Lyon, Squaw, and Thompson Creeks. The East Fork and tributaries are also important steelhead habitat; spawning occurs in Herd, Lake, Big Lake, Big Boulder, and Little Boulder Creeks. Population estimates, redd counts, or other indices of steelhead abundance are not available for the unit.

Salmon and steelhead stocks have been diminished drastically in the Columbia River system due to a number of factors. Because anadromous fish are migratory, they are vulnerable to harmful habitat changes in downstream areas as well as those in their "home" streams.

Columbia and Snake River dams, which impede both downstream migrations of young fish and upstream migrations of mature fish, are responsible for much of the decline in anadromous fish populations. Overfishing in the Pacific Ocean and Columbia River by commercial and sportsfishing interests has reduced fish numbers. Water pollution is another downstream problem (USDI, Bureau of Reclamation, 1975).

Deterioration of spawning and rearing habitat for trout and salmon has caused an unquantifiable reduction in the salmonid population in the Challis Planning Unit.

The major problems relative to salmonid production are dewatering of streams, direct fish loss through unscreened diversions, and siltation of stream substrate. Additional problems are associated with removal of riparian vegetation and water quality degradation.

Herd Creek is a major spawning stream in the unit. Seventy percent (20,888 square yards) of the available spawning habitat in Herd Creek was considered sufficiently impacted by silt to inhibit successful salmon spawning. Salmonid egg survival decreases markedly when more than 20 percent of the spawning substrate is composed of "fine" sediments less than 6.33 mm in diameter (Corley, 1976).

Table 2-24 summarizes the amount of "good" (less than 20% "fines") and "marginal" (more than 20% "fines") spawning habitat in the unit. Gravel riffles classified as "marginal" probably receive little anadromous fish spawning use.

Excessive amounts of silt have also reduced the salmonid rearing capacity of some streams. Aquatic insects are the primary

food supply of cold water game fish and inhabit spaces between gravel and boulders in the stream substrate. Excessive silt in the stream substrates reduces available food supplies by filling gravel interstices.

Unitwide, 95 miles of stream habitat are available for anadromous fish spawning (Map 2-12).

Of the 43 miles of anadromous fish streams bordered by public land, 28 percent are in fair condition, 61 percent are in good condition, and 11 percent are in excellent condition (Table 2-25). Fifty percent of the anadromous fish habitat bordered by private land is in fair condition; 47 percent is in good condition; 1 percent, poor; and 2 percent, excellent (Table 2-25). Criteria used to evaluate streams are listed in Appendix 5-A.

Habitat conditions of larger streams supporting anadromous fish are generally better than the 40.3 miles of small tributaries that support only resident fish. Almost all (95%) of the resident trout habitat bordered by public land is in "fair" or "poor" condition using criteria developed for the 1977 Challis FES (Table 2-23). Small streams are in fair or poor condition mainly due to lack of streambank vegetation, unstable streambanks and streambed siltation.

Streams like Bayhorse, Big Boulder and Little Boulder Creeks, although in "excellent" condition, do not sustain large populations of anadromous fish. Conversely, upper Herd and Pass Creeks were rated "fair" but support good populations of salmon compared to other streams in the area. These discrepencies reflect natural variations in the capacity of streams to support fish and limiting factors not considered by the habitat evaluation form (i.e., dewatering of streams during summer irrigation seasons).

Low gradient streams in the unit (Challis, Squaw, Thompson and Herd Creeks) are more suitable for anadromous fish spawning than higher gradient streams due to substrate composition; these same streams have sustained the most damage from grazing and stream dewatering because their alluvial valleys are inherently more suitable for agricultural production.

TABLE 2-22

GAMEFISH PRESENT IN THE CHALLIS PLANNING UNIT

Stream	Gamefish Present
Salmon River	CS, SS, SH, CT, RBT, DV, WF
Challis Creek	CS, SH, CT, RBT, DV, WF
Mill Creek	CT
Garden Creek	CT
Birch Creek	Trout
Bayhorse Creek	SH, CT, RBT, BT
Lyon Creek	SH, RBT
Spud Creek	Trout
Kinnikinic Creek	CT
Sullivan Creek	Trout
Squaw Creek	CS, SH, CT, RBT, DV, WF
Bruno Creek	SH, CT
French Creek	Trout
Thompson Creek	CS, SH, CT, RBT, DV, WF
East Fork River	CS, SH, CT, RBT, DV, WF
Road Creek	CT, RBT
Horse Basin Creek	Trout
Mosquito Creek	Trout
Bear Creek	CT, RBT
Herd Creek	CS, SH, CT, RBT, DV, WF
Lake Creek	SH, RBT
McDonald Creek	Trout
Fox Creek	Trout
Pine Creek	Trout
Big Lake Creek	SH, CT, RBT, DV, WF
Big Boulder Creek	CS, SH, CT, RBT, DV, WF
Little Boulder Creek	CS, SH, CT, RBT, DV, WF

CS=chinook salmon
SS=sockeye salmon
SH=steelhead
CT=cutthroat trout
RBT=rainbow trout
DV=Dolly Varden
BT=brook trout
WF=whitefish

TABLE 2-23

PRESENT HABITAT CONDITIONS OF RESIDENT TROUT STREAMS ON PUBLIC LAND IN THE CHALLIS PLANNING UNIT

Stream	Miles of Streams by Condition Class			
	Poor	Fair	Good	
Mill Creek		3.6		
Birch Creek	2.0			
Bayhorse Creek		0.5		
Lyon Creek		0.3		
Spud Creek	1.2			
Kinnikinic Creek		2.5		
Sullivan Creek			1.5	
Bruno Creek		2.4		
French Creek	1.4			
Road Creek	7.2	0.8		
Horse Basin	4.0			
Mosquito Creek	1.7			
Bear Creek	1.1			
Lake Creek		6.4		
Pine Creek		1.8		
Big Lake Creek			0.4	
Warm Springs		1.5		
Total Miles	18.6	19.8	1.9	40.3
	46%	49%	5%	100%

1/ From 1977 Challis FES with revisions from 1977 BLM survey.

TABLE 2-24

ANADROMOUS FISH SPAWNING HABITAT IN CHALLIS UNIT

Stream (miles)	"Good" Spawning 1/ Gravel (square yards)	"Marginal" Spawning 2/ Gravel (square yards)
Challis Creek (8.5)	1,444	11,435
Bayhorse Creek (3.0)	384	688
Squaw Creek (5.5)	3,244	10,667
Thompson Creek (8.0)	1,206	3,168
Herd Creek (7.5)	9,117	20,888
Lake Creek (0.5)	65	435
Big Lake Creek (1.0)	1,075	1,368
Big Boulder Creek (1.5)	20	126
Little Boulder Creek (2.0)	29	281
Total	16,584	49,074

1/ Less than 20 percent "fines" in spawning-sized gravel

2/ More than 20 percent "fines" in spawning-sized gravel

TABLE 2-25

HABITAT CONDITIONS OF STREAMS USED BY ANADROMOUS FISH

Stream	Miles - Public Lands				Miles - Private & State				Total Miles
	Poor	Fair	Good	Excellent	Poor	Fair	Good	Excellent	
Salmon River		3.5	14.0			3.5	14.0		35.0
Challis			0.50		0.25	4.75	3.0		8.5
Bayhorse			0.15	1.65			0.75	0.55	3.1
Lyon					0.30				0.3
Squaw		0.80	0.90	0.20		2.00	1.60		5.5
Bruno		0.60							0.6
Thompson		1.95	5.40	0.25		0.30			7.9
East Fork		4.0	1.0			13.0 a/	3.2 a/		21.2
Herd		1.20	2.60			2.00	1.60		7.4
Lake			0.40				0.10		0.5
Big Lake			0.90				0.10		1.0
Big Boulder			0.30	0.90			0.20	0.10	1.5
Little Boulder				1.80				0.30	2.1
Total		12.05	26.15	4.80	0.55	25.55	24.55	0.95	94.6
Percent		28%	61%	11%	1%	50%	47%	2%	

a/ Values extrapolated from % fair/good on public lands, 1977 Challis ES.

WILD HORSES

After passage of the Wild Horse and Burro Act of 1971 locations of wild horse bands were mapped for the Challis Unit. The largest concentration of wild horses is between Road Creek and Spar Canyon (Map 2-13).

Table 2-26 shows the actual count made in 1978 of wild horses in the unit. The net rate of increase since 1971 through 1977 is 20-24 percent.

TABLE 2-26

WILD HORSE NUMBERS AND FORAGE NEEDS

Allotment	Numbers	Forage Needs/AUMs 1/
Road Creek	64	960
San Felipe	129	1,935
Red Lake	53	795
Split Hoof	41	615
Warm Springs	275	4,125
Malm Gulch	24	360
Totals	586	8,790

1/ Forage needs for wild horses were calculated on the basis of utilizing 1,000 pounds of forage in a month.

The distribution of the horses changes with the seasons. During winter months most bands concentrate on low elevational ridges within Road Creek, Warm Springs, Split Hoof, Malm Gulch Allotments.

During the winter months, some horses (about 15 percent) choose to remain at higher and intermediate elevations and survive primarily on the windswept ridges. These ridges are usually barren of any sizeable cover and are extremely cold due to the wind. It appears that large canopy cover is not necessary for winter survival.

Forage availability becomes limited during the winter months. Map 2-14 shows areas where heavy horse concentrations occur in the winter months. Table 2-26 shows the present forage needs by wild horses by allotment. Table 2-27 is the percentage of winter area available by allotment.

Overuse of wild horse wintering areas (Map 2-14) is an item of concern. The wintering country available to wild horses becomes limited and wild horses are forced to concentrate on certain areas where they depend upon the forage present for sustenance. Some of these sites are the first areas that cattle

are allowed to use in the spring. Grazing during the spring, summer and fall by livestock eliminates forage for wild horses. Wintering wildlife utilize some of these areas, also.

TABLE 2-27

PERCENTAGE OF THE WILD HORSE AREA AVAILABLE DURING THE WINTER1/

Allotment	Total Acres	Acres Available	Percent Available	Forage Available for Wild Horses AUMs
Road Creek	15,565 2/	13,579	87	510
San Felipe	81,316 3/	50,989	63	1,230
Red Lake	23,195	12,424	54	630
Split Hoof	8,415	8,135	97	240
Warm Springs	59,703 4/	54,037	90	2,280
Malm Gulch	9,136	7,050	77	210
Total	197,330	146,214		5,100

1/Includes only federal range
2/Includes 1,032 acres within Road Creek Allotment but not within wild horse area
3/Includes 14,321 acres of Pecks Canyon
4/Includes 7,684 acres within Warm Springs Allotment but not within wild horse area

There are approximately 106 bands of wild horses averaging five horses per band. Each band establishes a home range with a fairly well defined boundary. Home ranges for several different bands overlap. A general idea of home range size can be determined from observations of the five marker bands during different seasons of the year. Map 2-13 shows the relative size of their home ranges as determined by their greatest distance of travel. The largest home range was exhibited by the Sorrel Bunch, which was roughly six miles by three miles. The smallest home range belonged to Burro Bunch Number Two, which was roughly three miles by three miles.

Movement patterns for individual bands were determined by observing the marker bands. Most bands do not move over four square miles during any time or season. Daily movement is generally feed-water related.

The sex ratio for the adult horse population appears to be 60 percent female and 40 percent male. This is an estimate based on direct observation. Most breeding occurs between April 1 and June 15, although some breeding does occur during other times of the year. This is evidenced by observation of a few foals being born in the months of July through December, while most foaling occurs between April 1 and June 15. Most foaling occurs in warm exposure in areas which are free of wind. Judging from the overall size, vigor and conformation, inbreeding does not appear to be a significant problem. An analysis of the age ratio of the population

indicates that nearly one-half of the horses now using the Challis wild horse range are two-year-olds or younger.

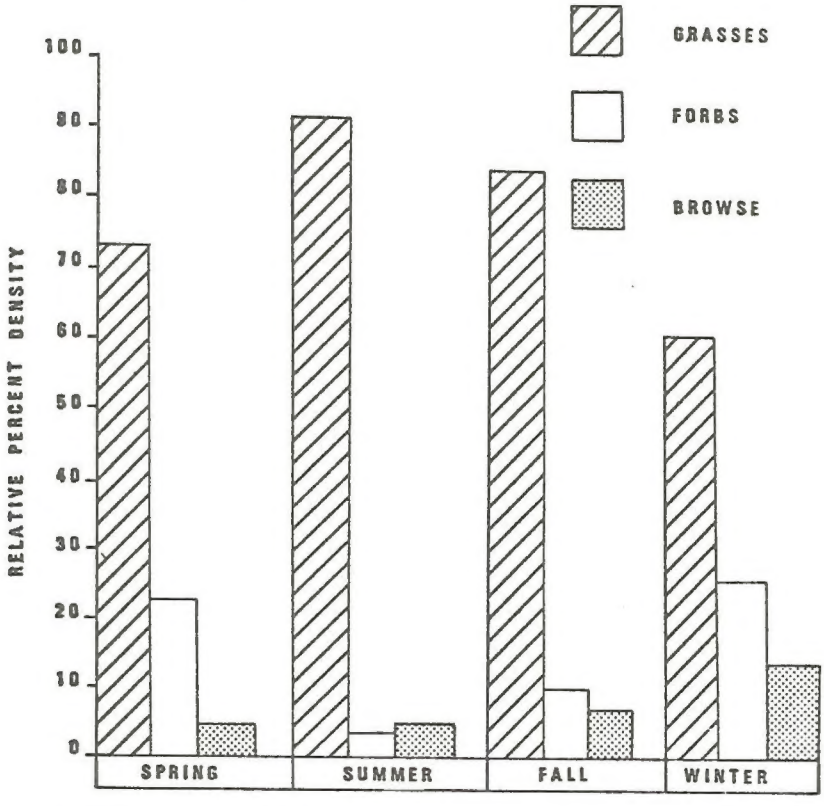
Vegetation throughout the horse area is predominantly sagebrush-grass. Therefore, most horses live in this type of cover year-round. Figure 2-1 shows the diet of the Challis wild horses. In the hot summer months, horses spend some time in the willows and other riparian vegetation but they more often seek out the higher elevations and ridge-tops. On windy days, horses have been observed to lie down in some of the larger patches of sagebrush for protection. Judging from the dung piles, horses will spend a substantial amount of time among trees if they are available.

Much of the wild horse area is in poor to fair condition. Wild horses graze the area yearlong (see Maps 2-2 and 2-14).

Fences identified on Map 2-14 cause modification of wild horse movement and caused two deaths in 1975-76 from entanglement with a barbed wire fence.

FIGURE 2-1

COMPARATIVE USE OF GRASSES, FORBS, AND BROWSE BY SEASON OF YEAR 1/



1/ Hansen, Report of Microphistological Estimates of Ruminant Food Habits of Deer, Elk, Horses, Cattle and Antelope in the Challis Unit, 1975.

LIVESTOCK GRAZING

The production of range beef cattle and calves is the predominant agricultural land use within the Challis Planning Unit. Thirty-eight permittees graze their cattle on 12 grazing areas within the unit. Table 2-28 identifies the dependency of each permittee's operation on public land, National Forest and private land.

The permittees operate typical cow-calf operations. The cows are bred to calve between late January and April. Calves are weaned and sold in the late fall when they return from their summer-fall pastures. Typically, cattle are driven to the spring ranges on public lands between May 1 and May 16 and remain there for a month to six weeks grazing period. From there the animals are put on summer ranges in late June or July on either public lands, the Sawtooth National Recreation Area (SNRA) or on high elevation public lands range. In late summer the animals are driven to fall ranges on public lands or they are taken to private lands for grazing purposes.

Hay, grain, and pasture produced on private, irrigated lands are used for winter feeding. Approximately 97 percent of the national public lands within the Challis Unit are utilized for grazing purposes by the permittees licensed in the unit.

A map of the 12 grazing areas in the unit and general description of grazing on the areas is found on pages 2-110 through 2-114 of the Final Environmental Statement of Proposed Domestic Livestock Grazing Program, Challis Planning Unit, 1977.

TABLE 2-28

Challis Unit Permittee's and Percent of Operations Dependent Upon Public Land, National Forest, and Private Land

OPERATOR	AVERAGE AUMs	DEPENDENCY ON BLM %	DEPENDENCY ON NFL %	DEPENDENCY ON PRIVATE %
Baker, Eddie	283	8.1	34.8	57.1
Baker, Richard	209	7.2	26.2	66.6
Bennetts, Jim	135	11.2	-0-	88.8
Bishop, Laura	346	27.3	3.5	68.2
Bradshaw, Eugene	56	15.7	30.1	54.2
Bradshaw, Kenneth	119	25.5	19.8	54.7
Carlisle, Lewis	223	35.9	24.9	39.2
Chivers, Garth	16	15.4	-0-	84.6
Cominotti, Fabio	246	11.5	21.7	66.8
Corrigan, Dick	78	15.0	-0-	85.0
Cutler, Howard	148	11.5	-0-	88.5
Ennis, Mrs. James L.	127	31.7	4.3	64.0
Hammond, John	147	12.7	9.5	77.8
Hammond, Robert	17	12.6	-0-	87.4
Hanson, Margaret	383	16.0	13.7	70.3
Helm, Calvin	39	9.0	38.5	53.6
Horning, Tim	9	24.4	-0-	75.6
Ingram, Will	4,521	23.3	10.6	66.1
Jan Mar Corp.	335	30.1	17.3	52.6
Keppner, Ray	199	7.7	21.1	71.2
Laverty, Ray	Non Use	12.5	-0-	87.5
Leuzinger, George	41	7.7	2.3	90.0
Leuzinger, Jake & Son	145	20.6	15.6	63.8
Maraffio, Frank	226	14.3	31.8	53.9
Peck, Joseph	72	39.6	4.5	55.9
Pedrini Brothers	181	11.6	23.4	65.0
Philps, Ethel	136	3.8	12.8	83.4
Piva Brothers	337	4.9	37.3	57.8
Pleus, Herman	25	13.8	-0-	56.3
San Felipe Ranch	7,396	36.9	2.8	60.3
Sherwood, Archie	45	11.3	-0-	88.7
Smith, Kenneth	36	14.7	-0-	85.3
Stark, Kenneth	9	4.1	-0-	95.9
Stevens, Robert	7	4.0	38.5	57.5
Westgard, Gean	48	8.0	-0-	92.0
Westgard, Golden	155	3.2	17.2	79.5
Wooley, Dan	429	25.3	8.1	66.8
Yates, Ralph	467	15.3	34.1	50.6
TOTALS	17,447			

In 1977 there were 38 livestock operators in the Challis environmental study area. Almost one-half of the operators (42.1 percent) had fewer than 100 cattle. Roughly the same amount had herd sizes between 101 to 300 cattle. Only five operators had herd sizes greater than 300 cattle (See Table 2-29).

TABLE 2-29

CLASSIFICATION OF CHALLIS LIVESTOCK OPERATORS BY HERD SIZE

Herd Size Classification	Number	Percent	Cumulative Percent
Small			
0-100 cattle	16	42.1	42.1
Intermediate			
101-300 cattle	17	44.7	86.8
Large			
301 cattle and over	5	13.2	100.0
	38	100.0	

Source: BLM, Idaho State Office, 1978

For the purposes of this study the ranchers were grouped into three categories; 0 to 100 cattle, 101 to 300 cattle, and over 300 cattle. Nine ranchers were interviewed, three in each category, during July 1978, to obtain representative financial and non-financial data. The results from this survey have been incorporated into the following analysis. For a more detailed discussion of the survey methodology please refer to Appendix 6-A and Tables 2-31, 2-32 and 2-33.

Ranch Operating Characteristics

During 1977 the three small ranchers surveyed averaged a $558 loss. All three operators had at least one outside source of income within the family. The degree of dependence on outside income varied between 25 percent and 80 percent. In one case both adult members of the household held off-ranch employment. In some cases the jobs were seasonal.

These small ranches are all primarily cow/calf operations due to the slim income margins available to them. They are seldom in a position to hold calves over for feeding and sales as yearlings. Small ranchers have relatively low levels of investment in machinery and equipment, again reflecting the lower amounts of capital and financing available to these operators. The lack of machinery and equipment is reflected in lower hay productivity levels than the

intermediate and large sized operations. Hay productivity is also lower due to lack of funds for purchasing seed and fertilizer.

Herd growth and replacement tend to be accomplished internally; this not only constrains the small rancher's ability to increase herd size, but it also reduces current income levels as the calf crop is retained and the cull cattle are sold. Overall herd size tends to be determined by the number of cows that can be wintered on the amount of hay produced by the ranch. In 1977, these operators were forced to buy hay due to poor crop conditions. This expenditure, on the average, was second in magnitude only to interest on debt. Since the amount spent on feed in 1977 was abnormally high, it must be viewed as a major contributor to the 1977 cash deficits.

Limited wintering capacity also contributes to the characteristic cow/calf operation. It reflects the trade-off between future production and current income.

In contrast to the small ranches, the medium-sized operators are more reliant on ranching as their primary source of income; any supplemental income is provided by their spouses. This reflects two characteristics of these ranches. First, they are large enough to require a total commitment of time and effort. Second, they are apparently large enough to be economically viable operating entities. The intermediate-sized operator tends to have more new machinery, including sprinkler irrigation systems and mechanized hay-handling systems. Both of these items tend to increase hay productivity and aftermath grazing by removing the cuttings and irrigating the field sooner.

There is a greater propensity for these ranchers to hold or purchase calves to feed to yearlings. This is in part due to the increased hay production and in part to a larger operating margin. While much of the herd replacement and/or growth is accomplished internally, these ranchers rely more heavily on the purchase of high quality bulls to improve their herds.

These ranchers are more aware of the trade-offs between current income, future income, and future productivity when determining winter-carried herd size, yearling hold-overs, and potential hay sales. There appears to be a greater intensity of use relative to smaller operations indicated by the lower number of gross acres per brood cow. Three possible explanations for this are (1) the existence of economies of scale in medium operations; (2) a relatively larger percentage of total acreage in production; or (3) a smaller portion of total acreage devoted to improvements, buildings, etc.

The large operators in the Challis environmental study area exhibit several unique characteristics which are not found in

small and intermediate operations: (1) they have significant labor expenses, second only to their interest expense; (2) they are fully diversified operations, frequently with some sort of cash crop; and (3) herd replacement and growth relies heavily upon livestock purchases.

All of the large operators interviewed had been in business less than eight years and had purchased their operations outright. This relatively short duration of current operation is reflected in their inventory of equipment and its condition. Widespread use of automated sprinkler systems and mechanized haying systems is universal. Through the increased use of sprinklers and fertilizer some large operators reported a threefold increase in hay production. This increase allowed them to feed some yearlings and still sell excess hay.

Large operations tend to more fully exploit allowable deductions under the tax code and while average income tends to increase with the size of operation, expenditures do not exhibit a similar trend.

TABLE 2-30

CHALLIS ES AREA LIVESTOCK INCOME

Classification	Number		Income		Total Income
Small	16	X	$ (558)a/	=	$ (8,928)b/
Intermediate	17	X	10,063	=	171,071
Large	5	X	6,024	=	30,120
Totals	38				$192,263

a/ Average income per operator
b/ Aggregate income for each category
Source: BLM, Idaho State Office

In 1977 there was approximately $192,000 in livestock income generated by operators in the ES area (Table 2-30). This was roughly one and a half percent of total personal income and 35 percent of farm-related personal income for Custer County.

TABLE 2-31

AVERAGE COSTS AND RETURNS FOR THREE SMALL
CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (1977)

	Average per Ranch	*Average per Brood Cow*
Returns		
Sale of Calves	$ 5,286	$ 86.66
Sale of Yearlings	---	---
Sale of Cull Cows and Bulls	2,602	42.66
Other Receipts	825	13.52
Gross Returns	$ 8,713	$ 142.84
Expenses		
Land Rent	$ 500	8.20
Feed	1,493	24.48
Livestock Expenses	150	2.46
Livestock Purchased	567	9.30
Insurance	250	4.10
Labor Expense	---	---
Taxes	662	10.85
Seed & Fertilizer	380	6.23
Machinery Operating Expenses	850	13.93
Repairs	433	7.10
Utilities	623	10.21
Federal Grazing Fees	586	9.61
Association Fees	---	---
Supplies	233	3.82
Misc. Expenses	450	7.38
Interest Expenses	2,828	46.36
Total Cash Expenses	$ 10,005	$ 164.02
Net Ranch Cash Income (Gross returns minus Cash Expenses)	$ (1,292)	$ (21.18)
Change in Inventory a/	734	12.03
Net Ranch Income (Net Ranch Cash Income Plus (or Minus) Change in Inventory and Ranch Perquisites)	$ (558)	$ (9.15)
Return for Operator Labor	$ 7,600	$ 126.67
Average Ranch Capital	$213,033	$3492.35
Percent Return to Capital	0%	0%
Acres	244	4.0
Herd Size	61 brood cows + 2 bulls	

a/ Price paid by rancher
Source: BLM Idaho State Office, 1978

TABLE 2-32

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (1977)

	Average per Ranch	*Average per Brood Cow*
Returns		
Sale of Calves	$ 17,334	$ 82.54
Sale of Yearlings	11,631	55.39
Sale of Cull Cows and Bulls	6,052	28.82
Other Receipts	--	--
Gross Returns	$ 35,017	$ 166.75
Expenses		
Land Rent	166	$ .79
Feed	3,541	16.86
Livestock Expenses	627	2.99
Livestock Purchased	10,554	50.26
Insurance	1,098	5.23
Labor Expense	1,068	5.09
Taxes	1,017	4.84
Seed & Fertilizer	1,844	8.78
Machinery Operating Expenses	3,311	15.77
Repairs	1,892	9.01
Utilities	1,046	4.98
Federal Grazing Fees	1,504	7.16
Association Fees	48	.23
Supplies	204	.97
Misc. Expenses	503	2.40
Interest Expenses	4,274	20.35
Total Cash Expenses	$ 32,697	$ 155.71
Net Ranch Cash Income (Gross returns minus Cash Expenses)	$ 2,320	$ 11.04
Change in Inventory a/	$ 7,743	$ 36.87
Net Ranch Income (Net Ranch Cash Income Plus (or Minus) Change in Inventory and Ranch Perquisites)	$ 8,243	$ 47.92
Return for Operator Labor	$ 7,600	$ 36.19
Average Ranch Capital	$499,667	$2,379.37
Percent Return to Capital	0.5%	0.5%
Acres	557	2.65
Herd Size	210 brood cows + 7 bulls	

a/ Price paid by rancher
Source: BLM Idaho State Office, 1978

TABLE 2-33

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (1977)

	Average per Ranch	*Average per Brood Cow*
Returns		
Sale of Calves	$160,755	$122.25
Sale of Yearlings	26,987	20.52
Sale of Cull Cows and Bulls	38,265	29.10
Other Receipts	10,394	7.90
Gross Returns	$236,401	$179.77
Expenses		
Land Rent	$ 4,667	$ 3.55
Feed	4,626	3.52
Livestock Expenses	6,323	4.81
Livestock Purchased	38,316	29.14
Insurance	11,955	9.09
Labor Expense	44,789	34.06
Taxes	12,770	9.71
Seed & Fertilizer	8,280	6.30
Machinery Operating Expenses	13,014	9.90
Repairs	18,887	14.36
Utilities	12,708	9.66
Federal Grazing Fees	13,284	10.10
Association Fees	292	.22
Supplies	3,555	2.70
Misc. Expenses	12,560	9.55
Interest Expenses	47,332	35.99
Total Cash Expenses	$253,358	$192.66
Net Ranch Cash Income (Gross returns minus Cash Expenses)	$(16,957)	$(12.89)
Change in Inventory a/	$ 22,981	$ 17.48
Net Ranch Income (Net Ranch Cash Income Plus (or Minus) Change in Inventory and Ranch Perquisites)	$ 6,024	$ 4.59
Return for Operator Labor	$ 14,774	$ 11.23
Average Ranch Capital	2,189,000	1664.64
Percent Return to Capital	0%	0%
Acres	7,183	5.45
Normal Herd Size	1315 brood cows + 71 bulls	

a/ Price paid by rancher
Source: BLM Idaho State Office, 1978

Public Values and Attitudes

This section is based on 12 interviews conducted by BLM social scientists. Thirteen local residents expressed their views about the Challis area's values and way of life and their perception of the impacts of the proposed action. One conversation included two respondents. (See Appendix 6-B for a description of methodology.)

Federal Management and Local Control. The one fact which, more than any other, seems to determine the social destiny of the Challis Planning Unit is that over 96 percent of Custer County is controlled by government agencies (BLM, USFS, and Idaho Fish and Game Dept.). This fact was spontaneously mentioned by three-quarters of those interviewed. The area's way of life, based on government-dependent activities of livestock grazing, mining, and timber, is susceptible to the overwhelming influence of governmental decisions about resource management. Respondents from the area tended to place BLM's grazing management plan in the context of other agencies' restrictive actions, painting an overall picture of an accelerating erosion of the ability of the local population to control its own destiny.

BLM Management of Wild Horses. A major sore point with respondents from Custer County is the wild horse issue. Eight persons raised the subject, maintaining there are more wild horses than BLM estimates, there are too many of them, they are increasing their numbers and expanding their territory at a rapid rate, and encroaching on the ranges of other forms of wildlife.

Wild horses are resented for their impact on forage local people would prefer to see allocated to livestock, but the issue is also cited as an example of imposition on the Challis area of non-local judgment and values. Two respondents pointed out the interest groups fighting for the protection of wild horses come from outside the area and do not understand local conditions or care about the welfare of local residents. BLM was viewed as being more responsive to environmentalists than to local user groups.

Recreation Development, Subdivision and Wilderness. Recreation development in Custer County is strongly determined by federal policy. The recent heavy transfer of private acreage near Stanley to federal ownership under the National Recreation Area has displaced a reportedly strong demand for second home development from the Stanley Basin to the East Fork area of the Challis Planning Unit. The area is scenic, and most respondents reported pressure on land owners there to sell to developers for subdivision into residential lots. Most past sales have reportedly entailed small (scenic but relatively "useless") portions of ranch properties, except for one rancher who recently sold out completely to a

"developer from Reno" and moved away. This event evidently made a strong impression on local residents, since it was mentioned in five interviews.

As one respondent put it, local people are "on the fence" about the trend toward subdivision. While it would increase the county's diminishing tax base (noted by five respondents), many people doubt they would welcome the changes in the character of the community likely to result from significant population growth.

Livestock Operator/Community Relationship. About half the respondents expressed the opinion Custer County depends on BLM grazing for its economic and social stability. One town-dweller said the ranchers were the "backbone of the community," and others pointed out the town's grocers and feed, seed, and implement dealers relied on sales to ranchers for a living. As one respondent put it: "Challis would go down the tubes without the ranchers." One respondent thought town-dwellers were indifferent to ranchers' problems, but two others said the townsfolk completely support and sympathize with the ranchers. One indicator may be that while none of the Custer County Commissioners are ranchers, both of those interviewed expressed views in harmony with those of the respondents who are livestock operators.

Motivation for Ranching. A number of respondents remarked area ranchers have been losing money for several years. When asked what motivated ranchers to maintain money-losing operations, the most frequent response (five respondents) was it's the only life they know. Some of these people expressed apprehension about starting a new life. Four respondents cited independence (being one's own boss) as a strong motivation, and four mentioned a family tradition of several generations' duration. Three stated simply, "It's a good way of life." None of those interviewed gave economic reasons for being in the livestock business. Rather, economic considerations were more a barrier to continuation or initiation of livestock operations. Over half the respondents said it was nearly impossible for a young person to get into ranching unless he inherited or married into an operation. While many of the young people would prefer to stay in Custer County and go into ranching, five people said most of the area's youth are forced to go elsewhere to make a living.

Water Use

Total consumptive water use by the major wildlife species and wild horses in the unit is estimated to be 3,627,825 gallons per year or 11 acre-feet per year. Livestock consume an estimated 5,233,200 gallons per year or 16 acre-feet per year. Consumptive water requirements by individual species are shown on Table 2-34.

TABLE 2-34

CURRENT CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE

Animal	Animal Month/Year j/	Gallons per Animal/Month	Total Gallons per Year
Livestock	17,444 b/	300 d/	5,233,200
Wild Horses	7,032 c/	360 d/	2,531,520
Deer a/	36,949	15 e,f/	554,235
Antelope	8,841	30 g/	265,230
Elk	1,602	150 d/	240,300
Bighorn Sheep	609	60 h,i/	36,540
			8,861,025 gallons/year

a/ 135 lbs. average wt., Anderson, (1978)
b/ Table 1-2
c/ Table 2-26
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Graves (1961)
j/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.

The Challis municipal water supply originates in the Garden Creek drainage. The municipal water demand is currently 584 acre-feet annually. The only other community in this unit, Clayton, supplies water to its residents from wells. All other domestic water in the area is obtained from wells or springs. Most of the 40 man-made earthen reservoirs within the unit hold water for no more than a few months at any one time.

Streamflow

Approximately 94 percent of streams in the unit drain into the Salmon River, with the remainder flowing into the Big Lost River. The United States Geological Survey (USGS) maintain 18 stream gauging stations in rivers and streams in the unit (Map 2-12). Maximum and minimum flows at various stations are listed in Appendix 7-A.

The Big Lost River seeps underground near Arco and probably contributes to the recharge of the Snake River aquifer. Year-round streamflow is maintained by snowmelt in the higher mountains and some springs. All water resources located within the unit are found on Map 2-12.

Water Quality

Physical, chemical and biological data affecting water quality was collected from U.S. Geological Survey river gauging stations (Water Resources Data for Idaho, Water Years 1969-1976). USGS data was supplemented with information gathered in a 1975 stream survey conducted by the University of Idaho (Fred W. Rabe, Ph.D.), a 1977 Bureau of Land Management stream survey and a 1976-1978 stream survey conducted by Region 10 of the Environmental Protection Agency. All information pertaining to water quality gathered from these surveys may be found in the Challis Unit Resource Analysis (Steps 2 and 3). A copy of the URA is available for public scrutiny at the Salmon District Office.

Concentrations of the major inorganic constituents, measured as dissolved solids (mg/l), increase in the Salmon River in a downstream direction as shown in Appendix 7-B. An increase in total dissolved solids occurs because of an increase in inorganic constituents. This tends to affect overall water quality in various ways, depending on the present condition of the water.

Concentrations of total dissolved solids decrease with an increase in flow, while concentrations of suspended sediment increase with an increase in flow, a phenomenon typical of most perennial streams (Appendix 7-B). Sediment yields are influenced by parent material, soils, climate, runoff, topography, land use and vegetative cover. The sediment yields by allotment are listed on Table 2-14.

All available data gathered from surveys, combined with information received from the District Seven Health Department indicates that chemical and biological characteristics of water originating on public lands within the unit present no water quality problems to irrigation, recreation, domestic use, livestock, wildlife, cold-water fisheries, and ground water recharge. This data is located in the Salmon District Office. There were short

periods in which certain parameters failed to meet standards established by the Environmental Protection Agency. With the exception of temperature and phosphorus levels, the durations usually corresponded with spring runoff and high intensity summer storms. Stream temperatures sometimes exceed optimum levels for salmonids because of high ambient air temperatures and/or reduced streamflows, but the duration is not enough to cause direct mortality of salmonids. The elevated levels of phosphorus have no detrimental impact on water quality or aquatic life and are a natural occurrence in the unit.

RECREATION RESOURCES

Hunting and fishing are a very popular recreation pursuit in the State of Idaho.

Hunting

It is estimated that 20,000 hunter-days were expended in the Unit in 1974.

Big Game	16,000 hunter-days
Upland Game	4,000 hunter-days
	20,000 hunter-days

Fishing

Estimated fisherman-days in 1974, 10,000.

The basis for these estimates is discussed in the Proposed Domestic Livestock Grazing Program for the Challis Planning Unit Final Environmental Statement, released January 1977.

Wild Horses

There is no data on the number of people and visitor days spent viewing wild horses in the unit.

CULTURAL RESOURCES

Identification

Cultural resources are defined as those non-renewable, fragile, and finite remains of human activity, occupation, and endeavor as reflected in districts, sites, structures, artifacts, objects, ruins, works of art, and architecture or documentation that are

located on public lands. In general, cultural resources are usually thought of in terms of prehistoric and historic values. However, in broader terms, cultural resources represent a continuum of human values extending from the earliest human events to the most recent.

All of the cultural resources thus far identified in the Challis Planning Unit are prehistoric and historic sites. Briefly, a site can be defined as any locus where traces of human activity are found (Plog Hill, 1973).

To date, there are 268 known cultural sites on public lands in the Challis Unit. Of these, 50 are considered to be of possible National Register quality.

Table 2-35 contains a brief description of the known cultural sites within the unit and identifies ownership of the land the site occurs on.

Summary of Unknown Cultural Resources

Based upon the combined results of the 1975 random and non-random surveys, it is estimated that 1,000 prehistoric and historic sites presently exist in the unit. Of these, approximately one-third are known while two-thirds remain unknown.

TABLE 2-35
KNOWN CULTURAL RESOURCES IN CHALLIS UNIT

Cultural Resources	Attributes/Condition	Period	
		Prehistoric	Historic
A. National Register	Two component Bison Jump, excavated by Idaho	X	X
10-CR-196	State University in 1970.		
Bayhorse a,b/	Early day mining town; ca.1880 to 1925. Approximately 50% of buildings still standing.		X
10-CR-385	A lookout/hunting blind/habitation/quarry complex with a small spring.	X	
B. Possible National Register Eligible			
10-CR-69	Campsite around a spring; good depth. Some erosion and trampling.	X	
10-CR-71	Campsite along a small creek; good depth; features, and much lithic detritus. Erosion and construction have damaged site.	X	
10-CR-74	Campsite along a small creek; good depth. Some erosion and trampling by livestock.	X	
10-CR-92	Rockshelter with pictographs; vandalized. Some rubbing and trampling by livestock.	X	
10-CR-98	Two campsites around a small lake; good depth and one midden deposit. Some trampling by livestock.	X	
10-CR-103	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-106	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-118	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-152	Campsite around a spring; heavy concentration of lithic detritus. Damaged by spring development and trampling by livestock.	X	
10-CR-176	Campsite near confluence of two small streams; good depth and concentration of lithic tools. Some trampling by livestock.	X	
10-CR-282	Campsite along a small stream; good depth and heavy concentration of lithic detritus and tools. Damaged by erosion and trampling of livestock.	X	
10-CR-339	Campsite along a small spring; good depth and heavy concentration of lithic detritus and tools. Slight trampling by livestock.	X	
10-CR-515	Campsite around a spring; some depth and heavy concentration of lithic detritus and tools. Some damage by development and livestock trampling.	X	
10-CR-344	Campsite around a spring; good depth and features. Some trampling by livestock.	X	
10-CR-359	A series of eight talus hunting blinds and one	X	
10-CR-414	small concentration of lithic detritus, all	X	
10-CR-450	located around a marshy spring.	X	
10-CR-451		X	
10-CR-513			
10-CR-361	Campsite along a small creek; good depth, features, scattered lithic detritus and tools. Damaged by livestock trampling, road construction and erosion.	X	
10-CR-363	Campsite along a small stream; good depth and features. Slight vandalism and trampling by livestock.	X	
10-CR-409	A series of 27 talus hunting blinds near the	X	
10-CR-410	mouth of a small canyon.	X	

TABLE 2-35 (cont.)

KNOWN CULTURAL RESOURCES IN CHALLIS UNIT

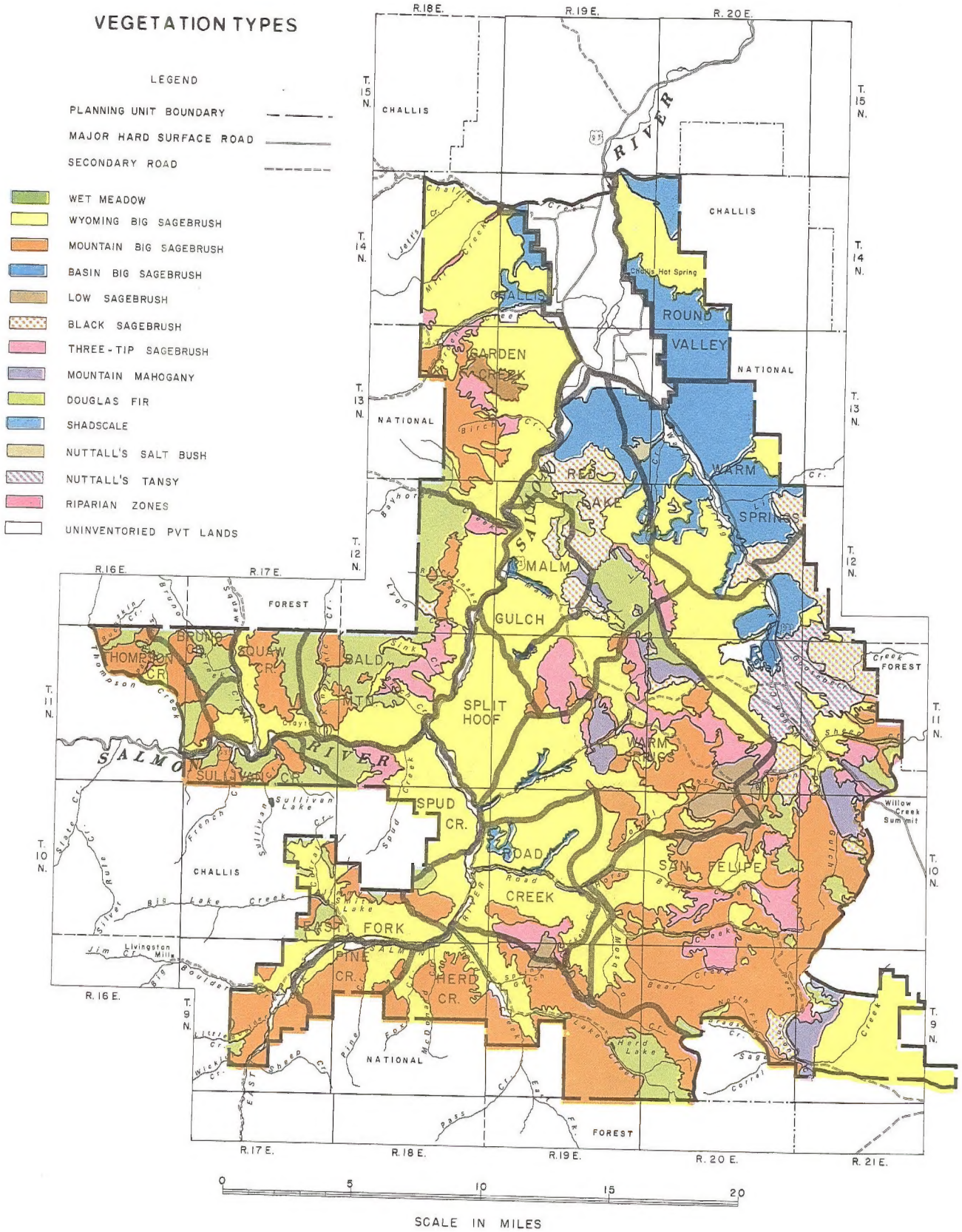
10-CR-411		X	
10-CR-412		X	
10-CR-425		X	
10-CR-427	Small freighting town of Crystal of the late		X
10-CR-428	1870s and early 1880s. Stone foundations are all		X
10-CR-429	that remain. Some vandalism and trampling by		X
10-CR-430	livestock.		X
10-CR-423	Poverty Flat mining area of the 1880s. Four log		X
10-CR-424	cabins and the remains of the Silver Bell mine.		X
10-CR-455	Some vandalism.		X
10-CR-435	Campsite along a creek; some depth, features, extensive area of lithic detritus and tools. Damaged by road construction, trampling by livestock and erosion.	X	
10-CR-437	High concentration of lithic detritus and associated talus hunting blind near creek. Road goes through site and trampling by livestock.	X	
10-CR-439	Campsite and historic homestead around a small spring. Prehistoric campsite disturbed by historic activity; trampling by livestock and erosion continuing.	X	X
10-CR-456	Campsite along Salmon River; good depth, features, shell middens and lithic detritus. Road goes through site which is subjected to trampling by livestock.	X	
10-CR-463	Campsite along Salmon River; good depth, features, lithic detritus. Some trampling by livestock and erosion.	X	
10-CR-467 c/	Campsite around a small spring; good depth, lithic detritus and tools. Some trampling by livestock and erosion.	X	
10-CR-485	Rockshelter near creek; deep deposit with smoke stained roof.	X	
10-CR-499	Campsite with possible semi-subterranean house depressions, possible burials on nearby talus slope and extensive lithic scatter. Some trampling by livestock.	X	
10-CR-506	Campsite around a spring; good depth and extensive concentration of lithic detritus and tools. Damaged by spring development and trampling by livestock.	X	
Anderson Ranch	Log ranch house in good condition; log barn collapsed. No date.		X
Challis-Mackay freight/stage rd. Challis-Bayhorse freight/stage rd. Bayhorse-Mackay freight/stage rd.	Sections of these early mining period freight and stage roads are in fair to good condition. These sections should be preserved/protected from grading and extensive vehicular use.	X	
Site of Challis-Mackay Road Ferry on the Salmon River and associated structures	Ferry is gone but some buildings are standing.		X
C. Non-National Register Eligible 222 b/ Total	Campsites, rockshelters, caves, talus hunting blinds, and lithic scatters with little or no depth. Many are extensively damaged.	X	
Penal cabin	Log homestead in good condition; no date.		X

a/Private property.
b/Federal, state and private property; of these, 21 sites are on private property, and 5 are partly on private property and partly on Federal or State property.
c/State property.

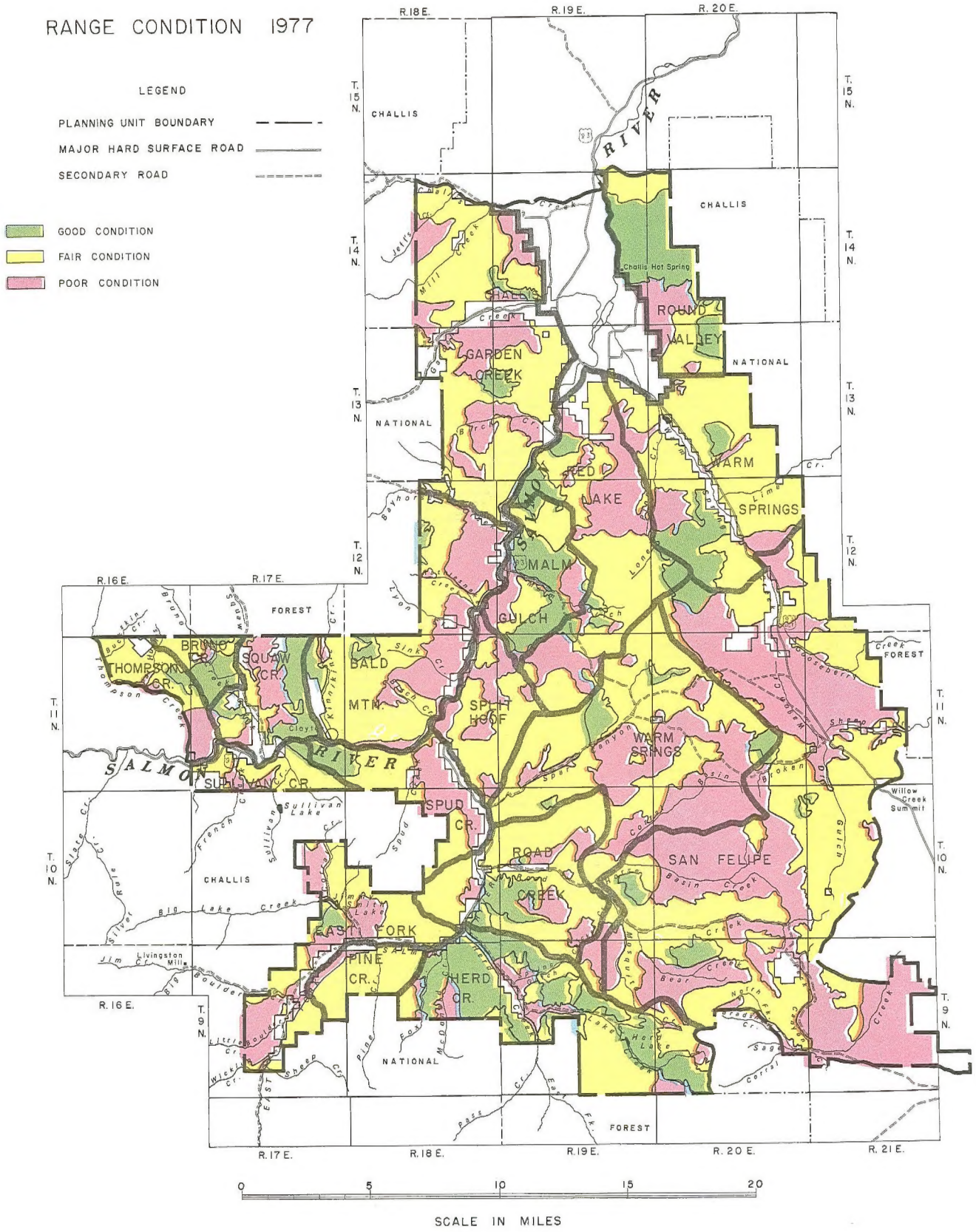
WILDERNESS

The wilderness inventory, in accordance with Sec. 603(a) of the Federal Land Policy and Management Act (FLPMA), has not been completed on the public lands that would be impacted by the proposal. Prior to implementation of any actions, the areas will have to be inventoried and impacts on potential or existing wilderness areas assessed.

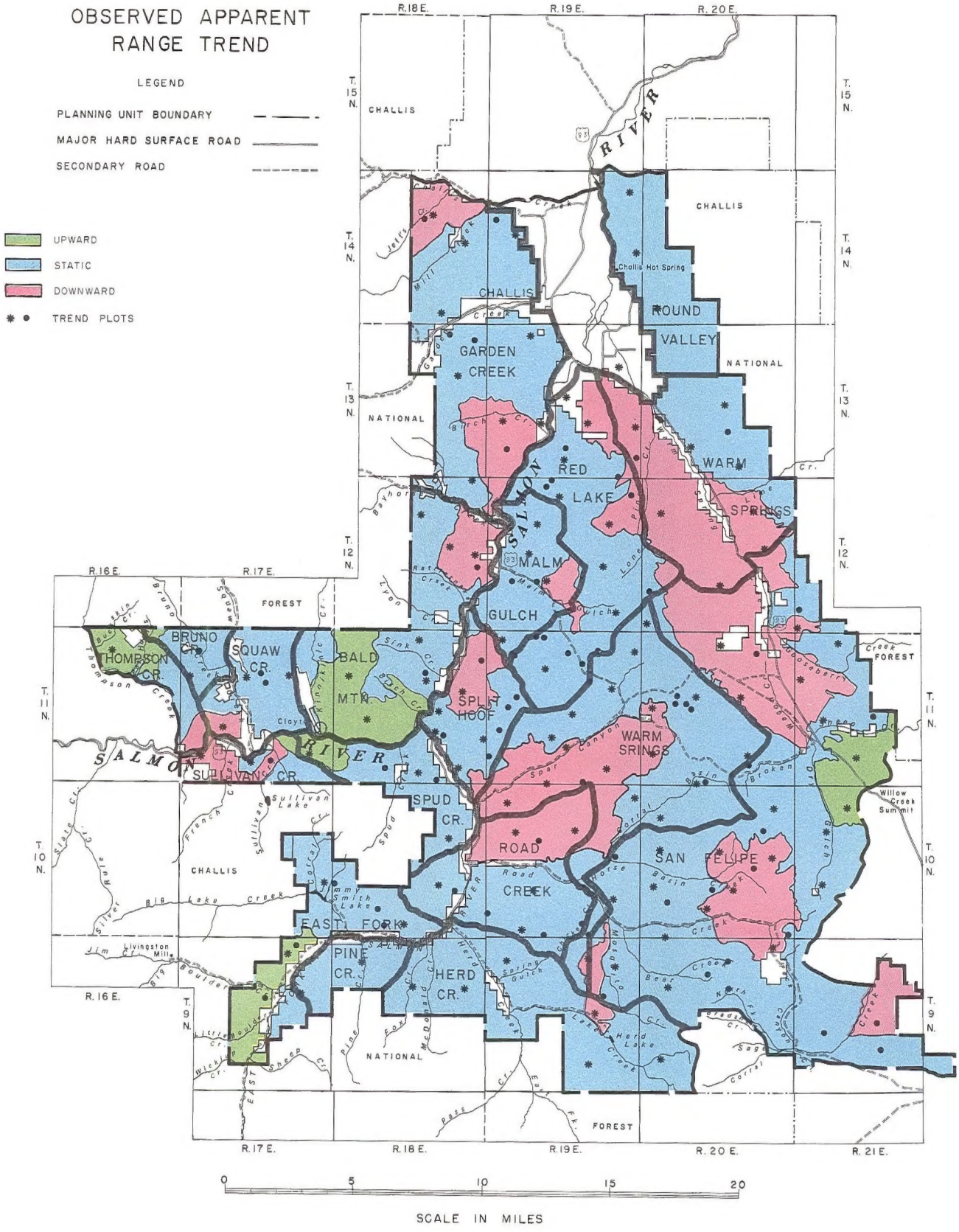
Until Congress acts on an area that has been designated for wilderness study, existing multiple-use activities, including grazing and supporting activities will continue. New uses or expanded existing uses will be allowed if the impacts will not impair the suitability of the area for wilderness.



MAP 2-1 VEGETATION TYPES



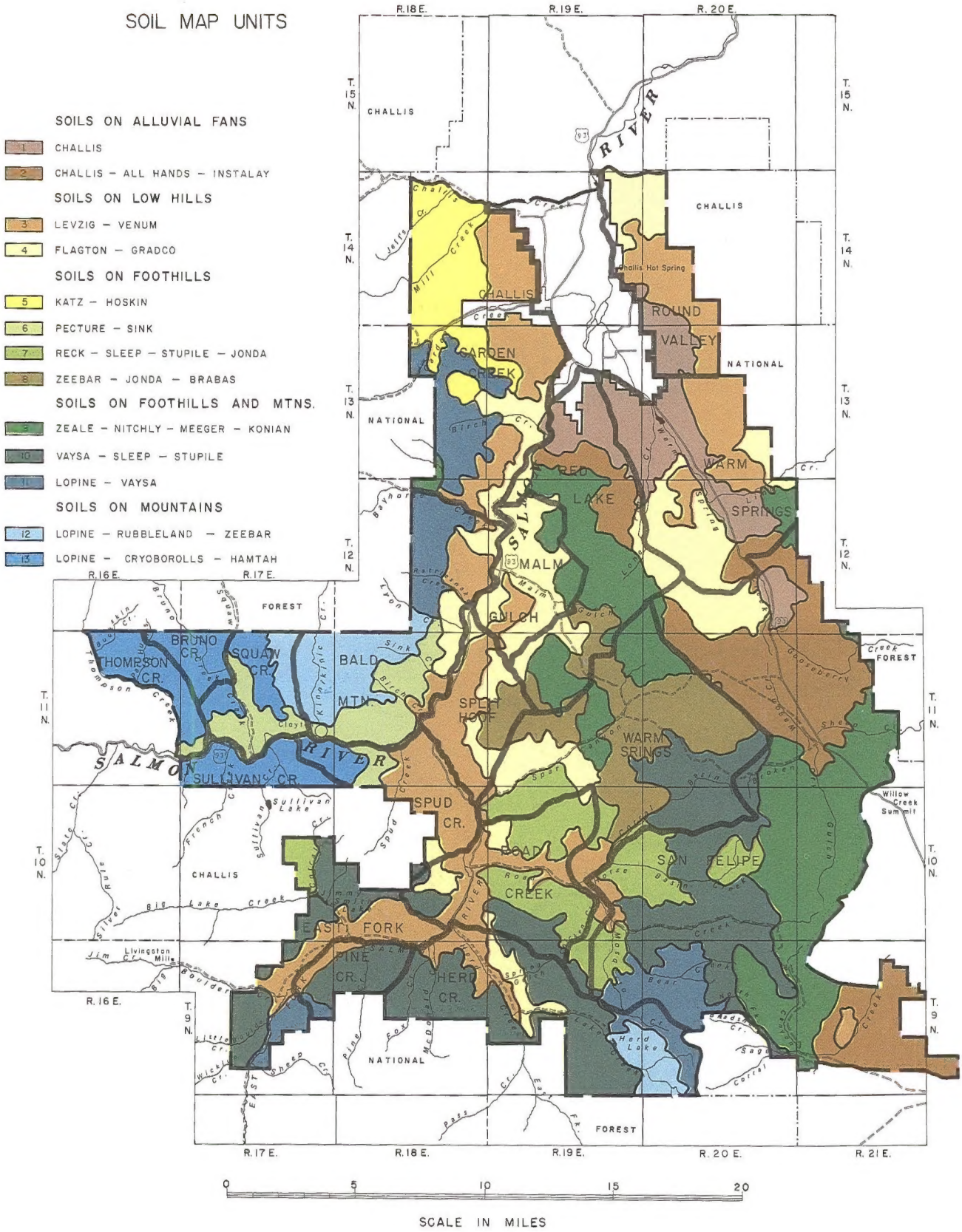
MAP 2-2 RANGE CONDITION



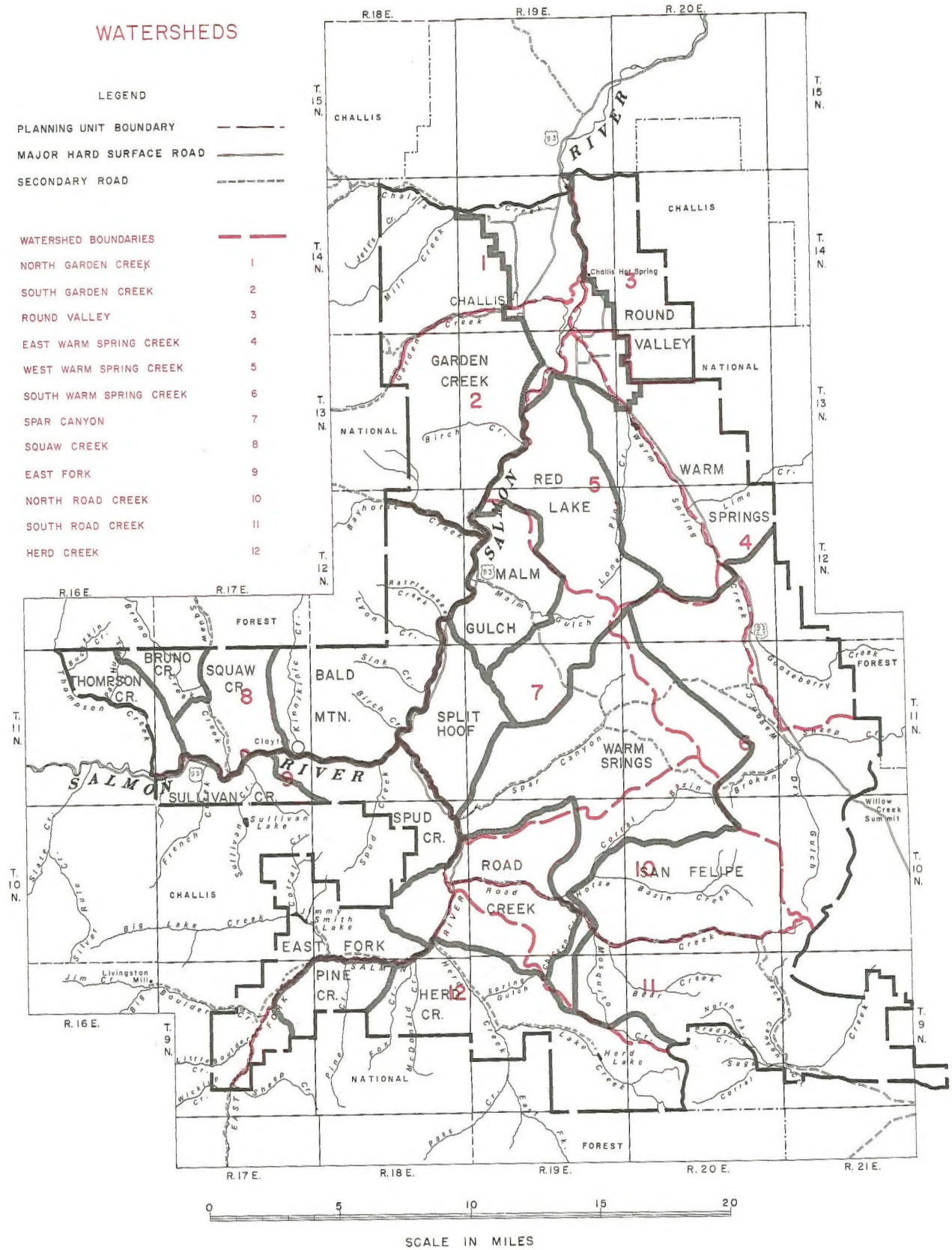
MAP 2-3 APPARENT RANGE TREND

MAP 2-4

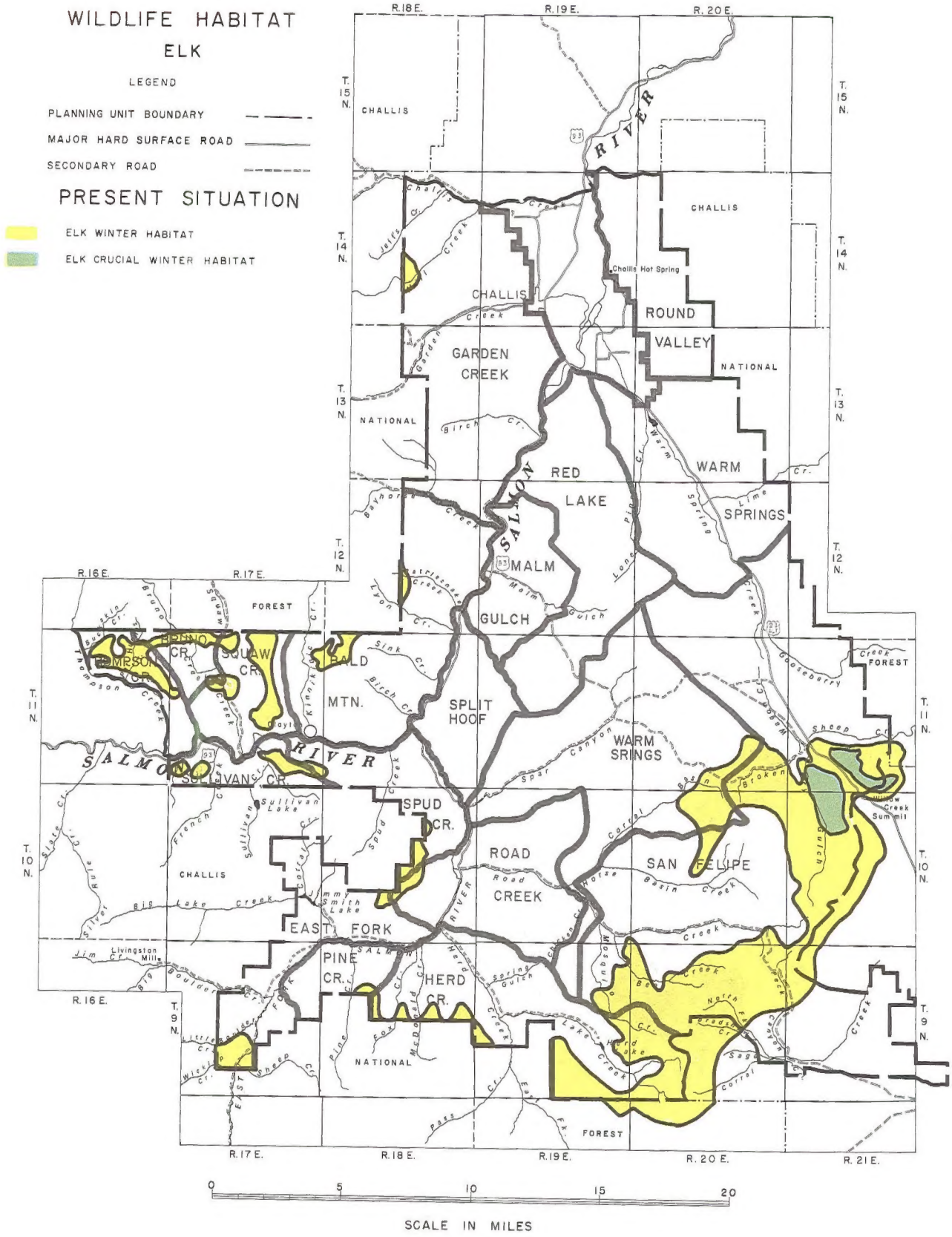
Deleted



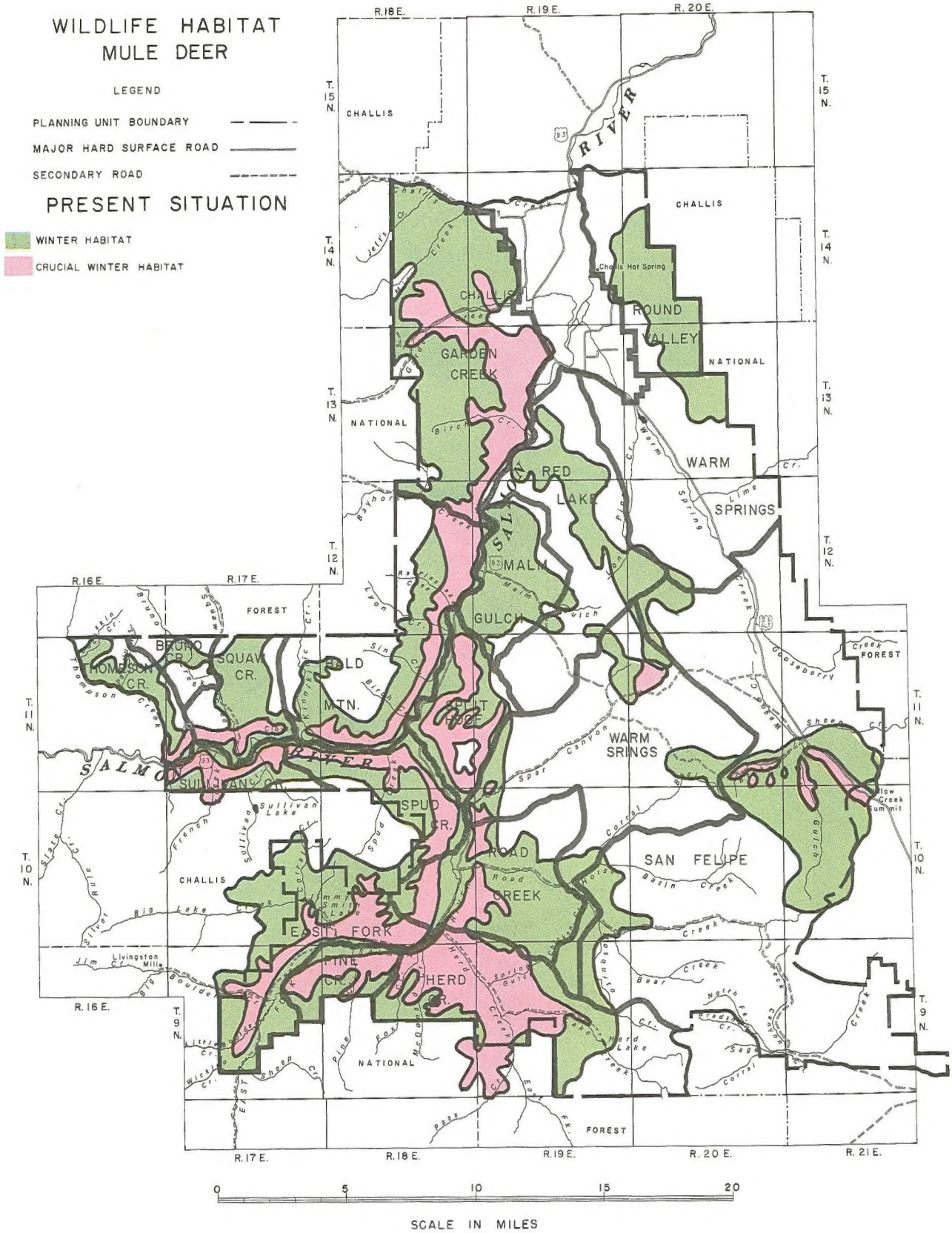
MAP 2-5 SOIL ASSOCIATION



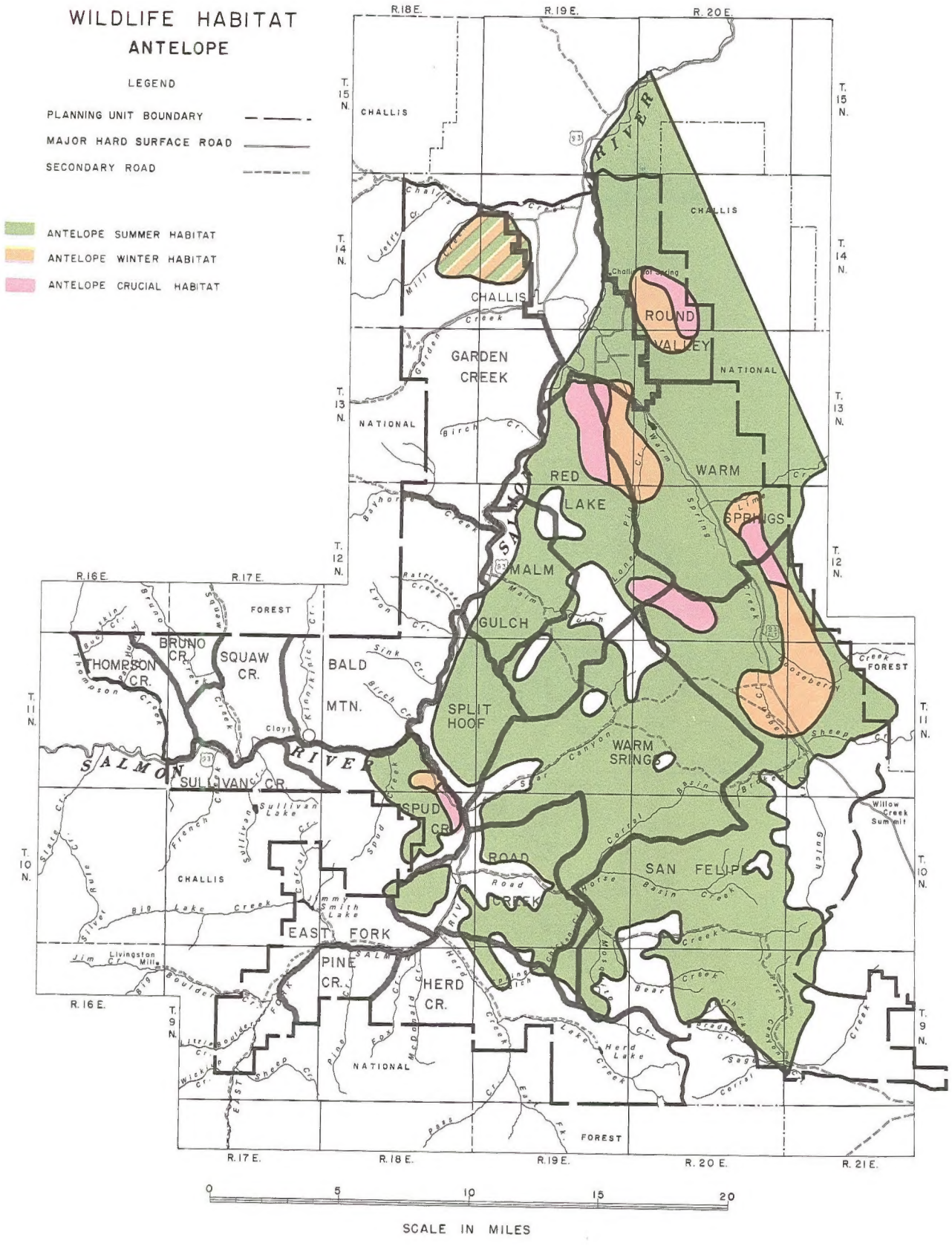
MAP 2-6 WATERSHED



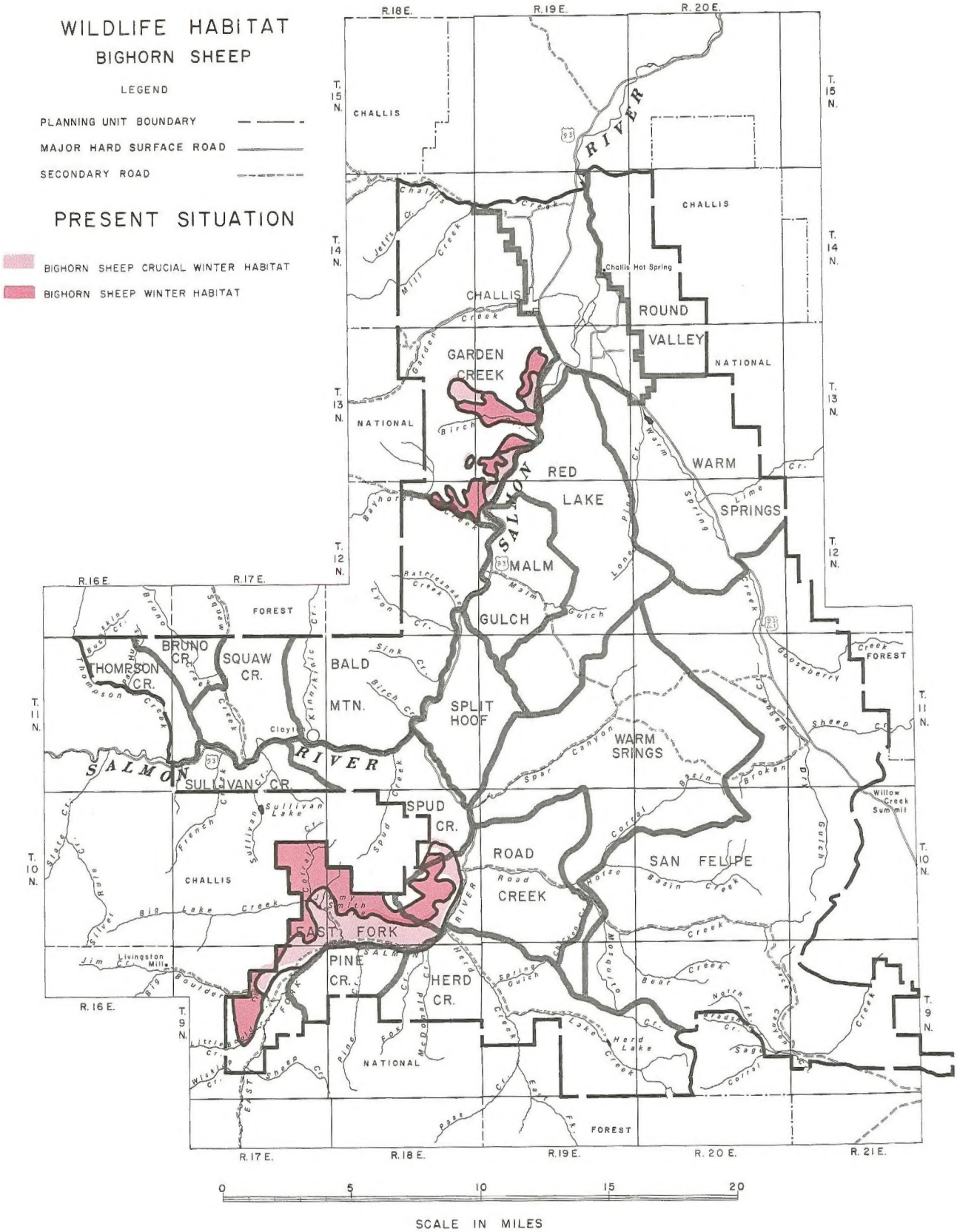
MAP 2-7 WILDLIFE HABITAT - ELK



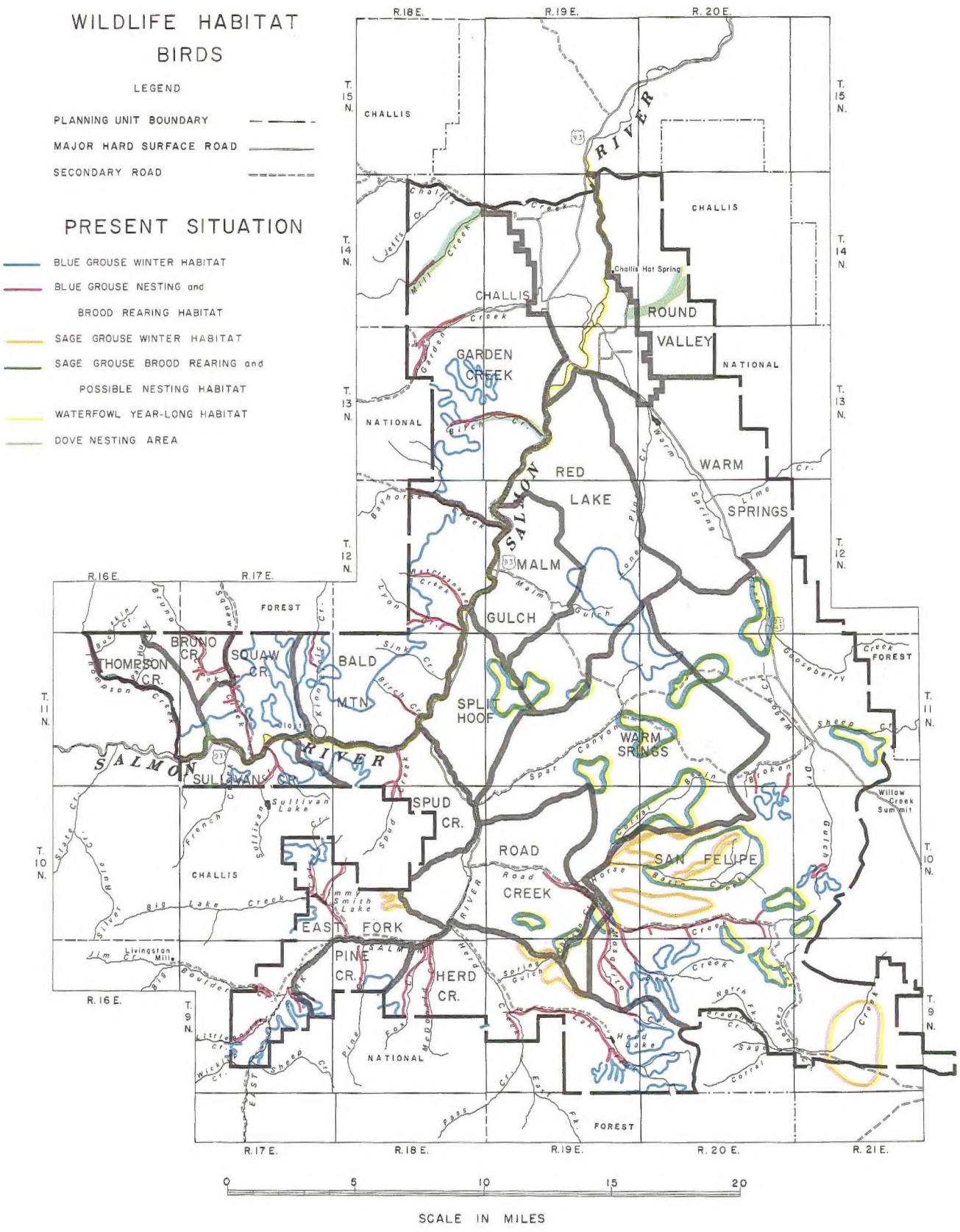
MAP 2-8 WILDLIFE HABITAT - DEER



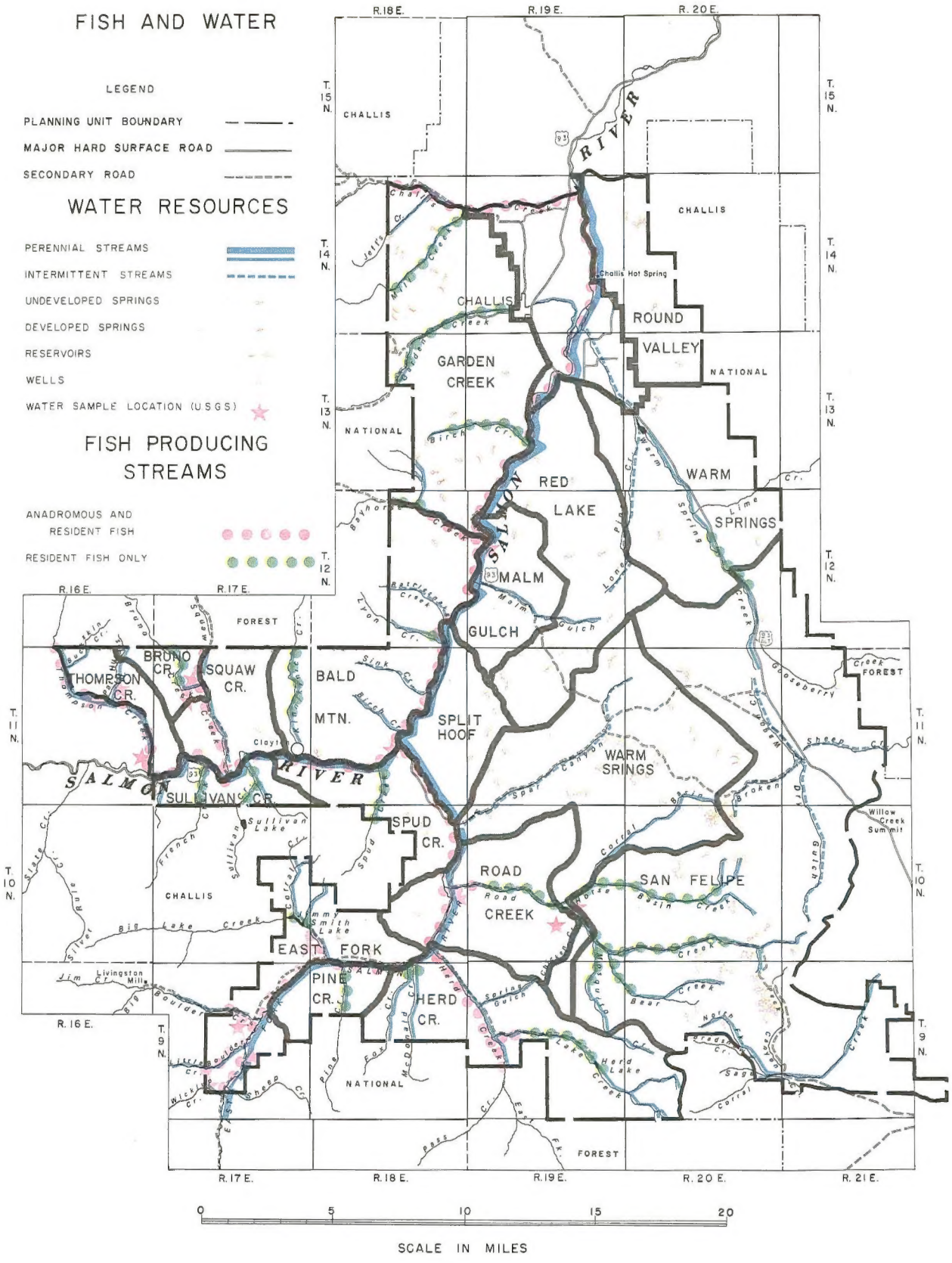
MAP 2-9 WILDLIFE HABITAT - ANTELOPE



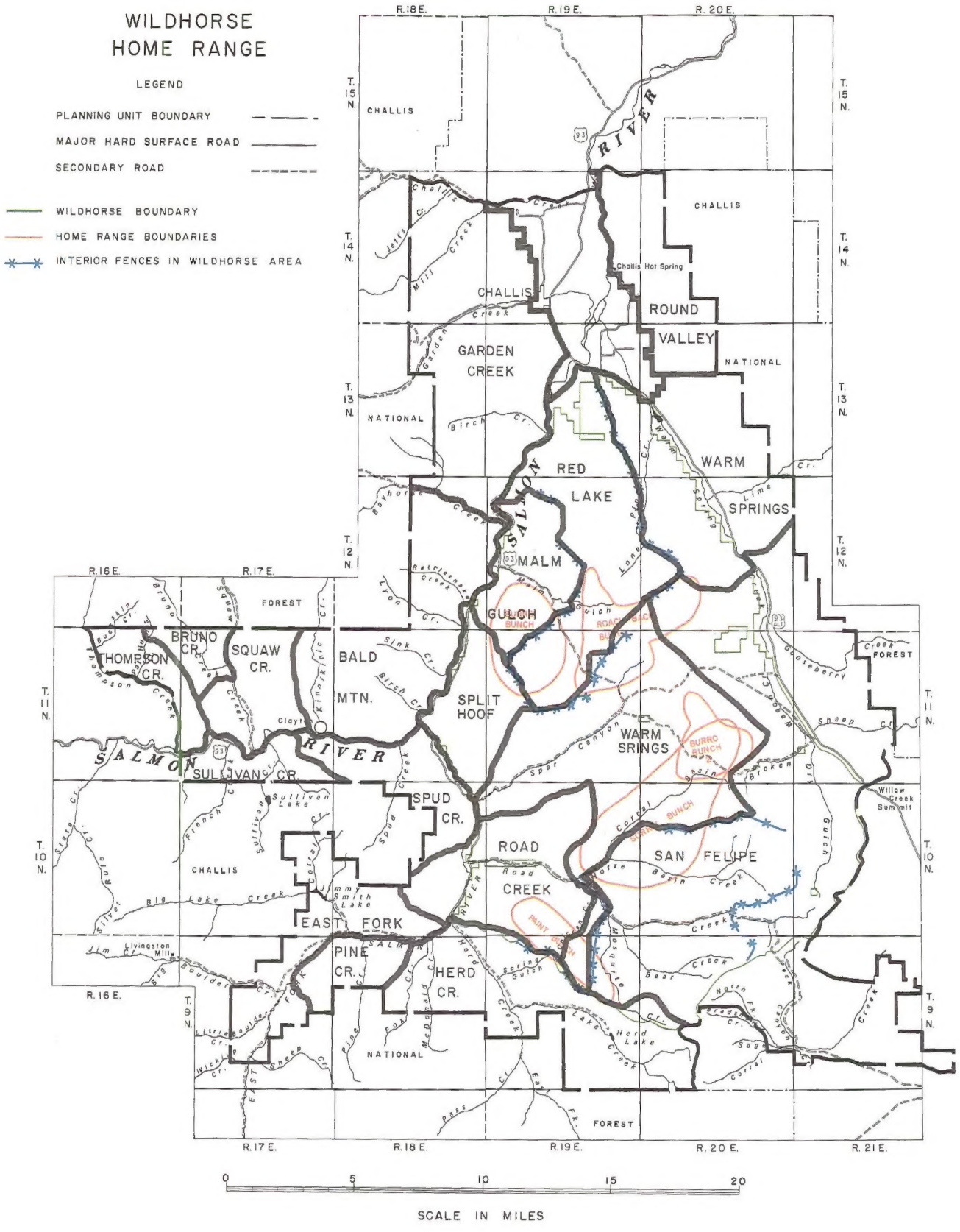
MAP 2-10 WILDLIFE HABITAT - BIGHORN SHEEP



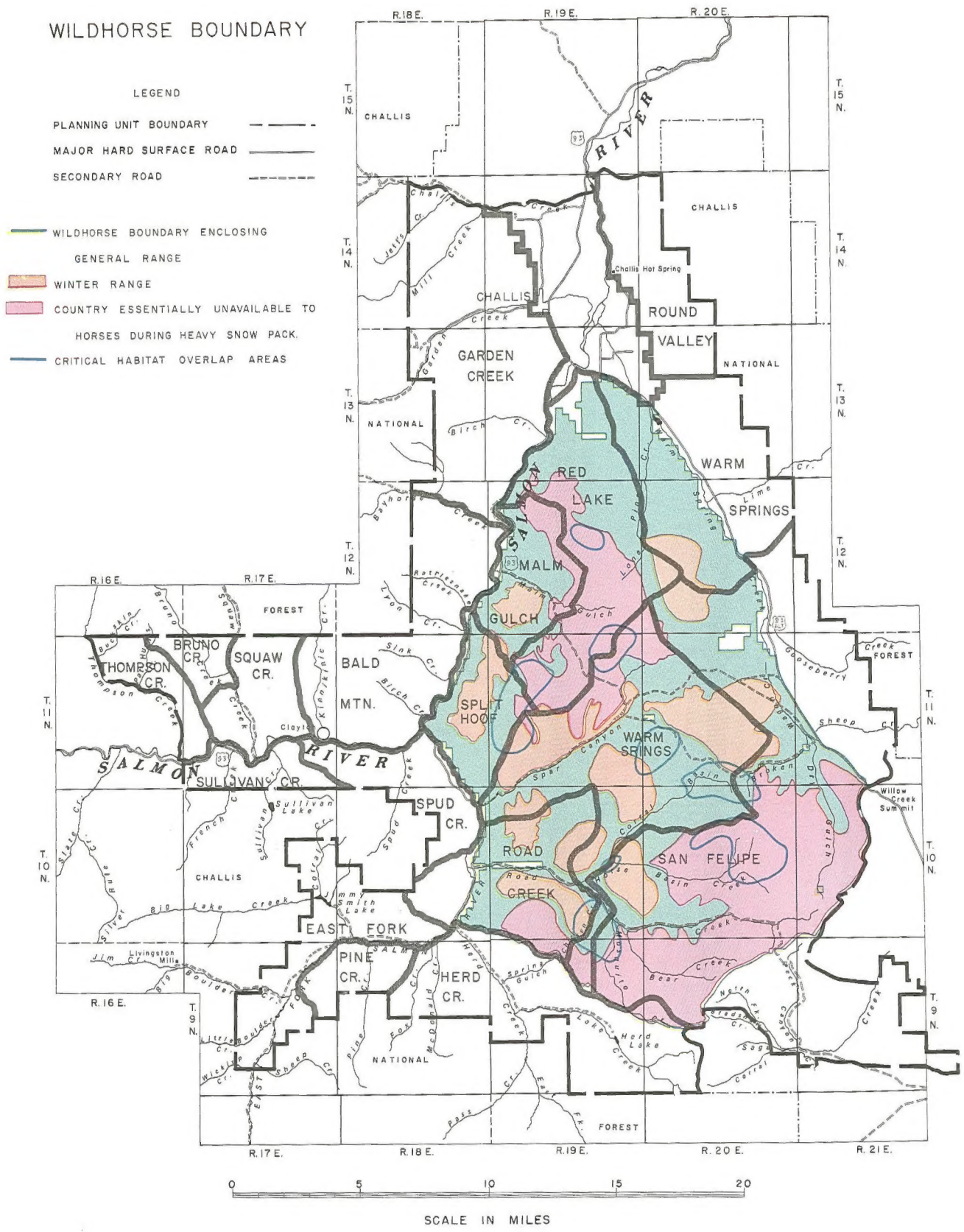
MAP 2-11 WILDLIFE HABITAT - BIRDS



MAP 2-12 FISH AND WATER



MAP 2-13 WILD HORSE HOME RANGE



MAP 2-14 WILD HORSE BOUNDARIES

Chapter 3

Environmental Impact of the Proposed Action

INTRODUCTION

Impacts are analyzed for those environmental elements predicted to be significantly impacted by implementation of the proposed action. Based on the analysis, no significant impacts are predicted to occur on the following environmental elements: Climate, Topography, Minerals, Geology and Visual Resources.

The impacts analyzed in this chapter are mitigated impacts based on implementation of the proposed action as designed and described in Chapter 1.

IMPACTS

Vegetation

The proposed action would result in several beneficial and adverse impacts to vegetation. The proposed overall downward adjustment of 40 percent in present livestock grazing would result in a reduction of the magnitude of adverse impacts that are presently occurring within the Challis Unit. Adverse impacts to vegetation presently occur as a result of the following factors:

1. Consistent heavy utilization (exceeding 60 percent), of annual forage production - This situation lowers vegetation vigor, prevents adequate seed production, and discourages reproduction of desirable species. It also reduces the amount of vegetation litter on the ground surface and promotes overland flow of water resulting in excessive soil loss.

The proposed action would limit utilization of palatable forage to 50 percent or less. This would reserve at least 50 percent of the palatable vegetation plus all of the unpalatable vegetation for watershed protection, wildlife habitat, and restoration of vegetation vigor. See Appendix 2-A for methodology used in determining vegetation inventory and allocation.

2. Early spring grazing - Forage plants depend upon an adequate storage of carbohydrate reserves to insure a food supply when rapid growth begins in the spring. About 75 percent of the carbohydrate reserve is used during the spring season in order to produce about 10 percent of the herbage growth. The carbohydrate storage is made during the growing season and reaches its peak during late autumn. If grazing is allowed during the spring

season when plants are drawing heavily upon their own food reserves, it tends to deplete their carbohydrate reserves and leaves the plant in a low state of vigor. The following spring, the plant is left with an inadequate storage of carbohydrates, resulting in poor growth, lowered vegetation vigor, and inadequate seedling establishment. If moderate to heavy spring grazing is allowed year after year, it will eventually kill the desirable forage plants.

The majority of the proposed management systems would be based on a May 1 livestock turnout date in the grazing area. Phenological data indicates that this turnout date may be two to five weeks prior to range readiness (range readiness is a defined stage of plant growth at which grazing may occur under a specific management plan without creating permanent damage to the vegetation or soil) of the key forage species in those allotments where seasonal grazing is proposed (see Table 3-3). The effects of early spring use is influenced by several factors. Under a rest rotation or deferred grazing system, the effects of early spring use is incurred periodically when the grazing unit is scheduled for early use. The remainder of the time, the grazing unit is protected from early spring grazing by livestock. Normally, under a deferred grazing system, spring use would not occur more frequently than every other year. Rest rotation systems usually do not submit a grazing unit to early spring use more frequently than every third year. Key vegetation species would have an opportunity to regain vigor and reproductive capabilities during these spring deferments and rest periods. The adverse effects of early spring grazing is more prevalent in the seasonal grazing systems because grazing occurs every year during the spring. The proposed action compensates for early spring use in the seasonal use allotments by imposing reductions in grazing use. Future monitoring of vegetation condition and trend will determine the adequacy of initial stocking rates in meeting the physiological needs of key vegetation species. See Table 3-3 for a comparison of range readiness to proposed livestock turnout dates. Table 3-3 also shows the proposed reductions in grazing use in the seasonal grazing areas.

3. Repeated grazing treatments during growing season - This practice tends to defoliate the desirable forage plants and prevents them from producing adequate leaves and photosynthetic tissue. Under these conditions, the plants are unable to produce seed and reproduction is, therefore, reduced or eliminated. If this practice is continued over a period of several years, it will end in the same results as (1) and (2) above.

Those allotments proposed for seasonal grazing where spring and fall grazing treatments are employed every year will result in the above mentioned impacts. The Bruno Creek and Pine Creek Allotments are the only allotments that fit this category. Adverse impacts resulting from consistent spring and fall grazing will be reduced somewhat in the Bruno Creek Allotment because the proposed

stocking rate is 33 percent less than the present stocking rate. Those allotments proposed for rest rotation or deferred grazing systems will not result in the impacts discussed above because each grazing unit will only receive one grazing treatment per year.

4. Inadequate livestock distribution - Livestock tend to congregate in areas where desirable forage and water is readily available. They stay in these areas until the vegetation or water is depleted. The livestock then begin using forage in areas of difficult accessibility and of low palatability. They also begin traveling further distances to water. If livestock are allowed to concentrate in the same areas year after year, it eventually results in the removal of desirable perennial vegetation and promotes the establishment of undesirable annual vegetation. It can also cause localized soil compaction problems that can lead to removal of all vegetation and result in accelerated erosion problems. The compaction problem can be compounded if livestock are allowed to congregate during the spring season on heavy clay soils when the moisture content is high (Stoddart and Smith, 1955).

The most serious impacts resulting from poor distribution of livestock occurs in the riparian areas and other desirable areas where slopes are gentle, forage is abundant, and water is available. Livestock tend to remain in these areas until the palatable forage is depleted. In doing so, they also cause adverse impacts to the vegetation by trampling it. This tends to remove the majority of the ground cover and results in increased erosion and degradation of the site. Reducing the number of livestock in a given area tends to reduce the grazing pressure in less desirable areas such as steep slopes and areas distant from water. However, grazing pressure remains relatively uniform within the desirable grazing areas. The lower number of livestock simply remain in the desirable grazing areas for a longer period of time and are not forced to utilize the less desirable areas. Table 3-2 identifies specific adverse and beneficial impacts that occur as result of the above-mentioned factors. These types of impacts are more prevalent on the allotments where seasonal grazing occurs and spring use is made every year. The rest rotation and deferred grazing plans are not as susceptible to these types of impacts because the grazing treatments tend to balance adverse and beneficial impacts and utilization is usually more uniform.

5. Range improvements - Construction of range improvements would temporarily remove about 76 acres from production and permanently remove approximately 10 acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegatation manipulations (see Table 3-1).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class. About 400 additional AUMs would be provided from brush beating projects.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegatation density increasing 100 percent. Range condition would be expected to change to good condition. Increases would be primarily livestock and wild horse forage. About 150 additional AUMs would be provided from plowing and seeding projects.

Burning would have a short-term impact of removing vegetation cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment. About 100 additional AUMs would be provided from burning projects.

The 1977 soils and vegetation inventory conducted within the study area indicates significant areas where soil and precipitation conditions are favorable for vegetation manipulation projects. Past projects have responded with favorable initial responses. However, several projects have reverted to poor condition because of past over use. Many of the projects were not provided protection for an adequate period of time so that new seedlings could become well established. The proposed action would stock future vegetation manipulation areas at or below carrying capacities after a minimum of two years protection has been provided.

Beneficial effects (in addition to those mentioned in number five above), would be obtained through implementation of improved grazing management. The following factors would have beneficial effects upon establishing and/or maintaining a desirable perennial vegetation:

1. Seed Trampling - When grazing occurs after desirable forage species have completed their annual growth cycles and produced seed, it has the effect of disseminating and planting the ripened seeds. When these areas are protected from grazing the following growing season, it allows the seeds to germinate and young plants to become established. In localized instances, grazing animals can have beneficial effects on vegetation by

loosening the surface of hard, dry soils. In doing so, the surface is broken and any seeds lying on the surface are buried were they can germinate when spring moisture comes (Stoddart and Smith, 1955). This treatment would be provided for in the rest rotation systems.

2. Several vegetation species are actually stimulated in vigor by light grazing (Stoddart and Smith, 1955). Light grazing implies 20-40 percent utilization. Some species react by reproducing a bushy growth form with increase volumes of photosynthetic tissue. This tends to produce increased volumes of succulent forage which is less rank and fiberous. Under these conditions the individual plants are able to maintain a high state of vigor (Stoddart and Smith, 1955).

3. Reduced levels of grazing coupled with grazing management systems that provide a systematic rest or deferment from spring grazing will result in an increase in total ground cover by live vegetation and litter. See Table 3-7 for existing ground cover by vegetation type and allotment compared to predictions after 15 years under the proposed action.

The major beneficial impacts to vegetation as a result of the proposed action would be the increase in the acreage of good condition range and the reversal in a considerable amount of downward trend in condition. It is estimated that at the end of 15 years the amount of good condition range would go from 33,815 acres to 88,260 acres; fair condition range would go from 145,438 acres to 117,786 acres; and poor condition range would go from 103,565 acres to 76,716 acres. For specific projections regarding vegetation condition by allotment see Table 3-4 and 3-5 . See Appendix 2-F for methodology in predicting changes in range condition.

Trend in condition would also be improved as a result of the proposed action. The present 12,790 acres in upward trend would be increased to 94,144 acres at the end of 15 years, present downward trend of 72,977 acres would be decreased to 570 acress and present static trend on 196,995 acres would be reduced to 188,618 acres (see Table 3-6). See Appendix 2-F for methodology in predicting future changes in trend.

The proposed action would convert about 8,000 acres presently classed as unsuitable for grazing to a suitable classification. This conversion would be accomplished through water developments and improved productivity of the vegetation.

Total vegetation production (biomass) would be increased as a result of the proposed action. Table 3-8 indicates that total biomass production would be increased by about four million pounds on an annual basis. This would result in increased ground cover in the form of live vegetation and ground litter. A summary of Table 3-8 indicates the following data:

Present Total Biomass Production	- 124,320,398 Pounds
Total Biomass Production After 15 Years	- 128,856,589 Pounds
Present Production of Palatable Forage	- 110,170,908 Pounds
Potential Production of Palatable Forage	- 130,876,362 Pounds

The data presented on Table 3-8 is based on a vegetation inventory conducted in 1977. A soils inventory was conducted during the same period of time and soils/vegetation relationships were identified. Predictions concerning biomass production are based on actual vegetation clippings on the various soil/vegetation relationships in various ecological condition classes. Detailed descriptions of the ecological sites within the study area can be found in Appendix 2-E. Soils productivity and precipitation were the controlling factors in determining potential biomass production.

Threatened or Endangered Plants. The effects of the proposed action upon sensitive plant species is not known. However, it is known that these plant species occur within the area and they have evolved and sustained themselves under past grazing practices. The detailed forage inventory has identified where these plants occur, and the proposed action makes provisions for their protection. A detailed monitoring system included in proposed future management will identify the effects of livestock grazing on sensitive vegetation species.

TABLE 3-1

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	54.1	1	.002	54.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years

TABLE 3-2

PREDICTED SHORT-TERM IMPACTS AND NET LONG-TERM IMPACTS TO VEGETATION AS A RESULT OF THE PROPOSED GRAZING SYSTEMS

Allotments And Proposed Management	Allotment Acreage	Proposed Season of Use For Livestock	Grazing Treatment and Short-Term Impact Created by the Treatment	Net Long-Term Impacts to Vegetation
Rest Rotation - Four Treatments Warm Springs	59,703	5/ 1 to 12/15	Graze Spring - Vigor, seed production, litter accumulation reduced. Rest Yearlong - Vigor, seed production, litter accumulation increased. Graze after Seedripe - Vigor, litter accumulation reduced. Seed production and seed trample increased. Graze during Winter - Vigor, reproduction, and seed trample increased. Litter accumulation decreased.	The proposed level of livestock grazing would require 1,039,200 fewer pounds of palatable forage than is presently being utilized on an annual basis. This reduction coupled with the implementation of a systematic rest period would result in a net long-term improvement in vegetation condition and vigor. Total ground litter would increase over the long term.
Rest Rotation - Three Treatments				
Herd Creek	22,050	6/16 to 10/31	Graze Spring - Vigor, seed production, litter accumulation reduced. Rest Yearlong - Vigor, seed production, litter accumulation increased. Graze After Seedripe - Vigor, litter accumulation reduced. Seed production and seed trample increased.	The proposed level of livestock grazing would result in fewer pounds of palatable forage being utilized on an annual basis. The Garden Creek, Bald Mountain, and East Fork allotments would each require about 2.5 million fewer pounds of palatable forage under the proposed action. The San Felipe allotment would require about three million fewer pounds. The long-term impacts for these four allotments would be the same as those discussed above for the Warm Springs allotment. The future stocking rate for Herd Creek will remain about the same as the past eight year average. Therefore, existing trends in condition will continue.
San Felipe	81,316	5/ 1 to 9/29		
Garden Creek	30,458	5/ 1 to 6/30		
Bald Mountain	22,597	5/ 1 to 6/30		
East Fork	11,715	5/ 1 to 6/30		
Deferred Grazing				
Spud Creek	8,856	5/ 1 to 6/30	Graze Season Long - Vigor, seed production, litter accumulation reduced. Defer until Seedripe - Vigor, seed production, litter accumulation increased. Graze after Seedripe - Litter accumulation reduced. Seed production and seed trample increased.	The proposed level of livestock grazing would require 30,400 fewer pounds of forage on the Spud Creek allotment and 248,800 fewer pounds of forage on the Squaw Creek allotment than is required under the present stocking levels. These downward adjustments in grazing use coupled with a systematic deferment of spring use will result in net long-term improvements in vegetation condition and vigor. Total ground litter would increase over the long term.
Squaw Creek	7,044	5/ 1 to 6/30		
Deferred Grazing Thompson Creek	5,595	5/16 to 10/15	Defer Grazing on Upper Pasture until Seedripe each Year - Vigor, seed production and seed trample increased. Litter accumulation reduced. Rotate Spring Grazing between Two Lower Pastures Graze Spring - Vigor, seed production, litter accumulation reduced. Defer until Seedripe - Vigor, seed production and seed trample increased. Litter accumulation reduced.	The proposed level of livestock grazing would result in 60,000 fewer pounds of forage being consumed on an annual basis than is presently being consumed by livestock. The net long-term impacts as a result of the proposed grazing system on Thompson Creek would be the same as those impacts identified above for Spud Creek and Squaw Creek.
Seasonal Grazing				
Red Lake	23,195	5/ 1 to 6/30	Graze during Spring Every Year - Vigor, seed production, litter accumulation reduced.	An average downward adjustment of 39 percent is being proposed for the Red Lake, Road Creek, Bruno Creek, and Split Hoof allotments. The net long-term results will be an improvement in vegetation condition and vigor in those less desirable grazing areas where slopes are steep and water is difficult to obtain. The limiting factor is the consistant early spring turn out date. This situation will create long-term adverse impacts in the desirable grazing areas where slopes are gentle and water is available because livestock will tend to selectively graze desirable forage species early in the spring year after year. The Round Valley and Sullivan Creek allotments are proposing increases in grazing use. This will result in adverse impacts to desirable vegetation for the same reasons mentioned above.
Road Creek	15,565	5/ 1 to 6/30		
Bruno Creek	2,378	5/16 to 9/30		
Round Valley	13,503	5/ 1 to 6/30		
Split Hoof	8,415	5/ 1 to 6/30		
Pine Creek	5,026	5/16 to 6/30		
Sullivan Creek	3,570	5/ 1 to 6/30		

TABLE 3-3

PROPOSED SEASONS OF USE FOR SEASONAL USE ALLOTMENTS
COMPARED TO PHENOLOGICAL DATES OF RANGE READINESS

Allotment	Key Vegetation Species & Dates of Range Readiness (Above 6000 ft.)	Key Vegetation Species & Dates of Range Readiness (Below 6000 ft.)	Proposed Season of Use for Livestock	Present 8-Year Average Use by Livestock (AUMs)	Proposed Livestock Use (AUMs)	% Adjustment in Grazing as Result of Proposed Action[1/]
Red Lake	AGSP 5/20-6/20	AGSP/SIHI 5/11-5/30	5/01-6/30	1,062	613	-42
Road Creek	AGSP 6/01-6/24	AGSP 5/17-5/31	5/01-6/30	548	346	-37
Bruno Creek	FEID/AGSP 6/10-6/30	AGSP 5/17-6/08	5/16-9/30	127	85	-33
Round Valley	AGSP 5/17-6/08	SPCR 6/09-6/17	5/01-6/30	363	438	+21
Split Hoof	AGSP 6/01-6/24	AGSP 5/11-5/30	5/01-6/30	204	118	-42
Pine Creek	AGSP 6/01-6/24	AGSP 5/17-5/31	5/16-6/30, 10/01-10/16	179	181	+ 1
Sullivan Creek	AGSP/FEID 6/01-6/30	AGSP 5/11-5/31	5/01-6/30	81	85	+ 5

1/ Some of the allotments show an increase in livestock use as a result of the proposed action. This is a result of the livestock operators not using their allotments to the full extent of their authorized active privileges during the past eight years. The vegetation inventory identifies available forage in excess of the eight year average and, therefore, proposed to allocate forage at the productive level of the allotment. In all probability, the allotments showing an upward adjustment will continue to be used at or near the eight year average.

TABLE 3-4

VEGETATION CONDITION BY ALLOTMENT AND VEGETATION TYPE AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION 1/

	Basin Big Sagebrush (ARTRT)				Wyoming Big Sagebrush (ARTRW)				Mountain Big Sagebrush (ARTRV)				Gray Low Sagebrush (ARARA)				Black Sagebrush (ARARN)			
	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total
Red Lake	20.3	7.2	69.9	97.4	2283.2	924.2	2865.3	6072.7	1332.3	1366.2	244.7	2943.2	-0-	-0-	-0-	-0-	875.3	2068.0	726.6	3669.9
Herd Creek	15.4	-0-	-0-	15.4	2529.8	999.8	172.0	3701.6	6973.2	4029.9	90.8	11093.9	198.4	101.7	-0-	300.1	-0-	-0-	-0-	-0-
Road Creek	5.3	86.7	50.9	142.9	2410.4	4436.6	1851.1	8698.1	1017.4	1763.1	104.0	2884.5	29.2	1.7	-0-	30.9	-0-	-0-	-0-	-0-
Bruno Creek	-0-	-0-	-0-	-0-	64.1	17.0	1.1	82.2	618.6	397.1	8.3	1024.0	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Round Valley	39.3	18.1	138.2	195.6	3959.0	282.4	96.3	4337.7	114.0	-0-	-0-	114.0	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
San Felipe Seedings	115.9	15.1	584.2 (16.8)	715.2	3871.4	5492.3	11904.1 (2269.9)	21267.8	5563.9	13311.9	3666.8	22542.6	59.8	390.8	75.8	526.4	2529.7	1555.4	996.1 (9.6)	5081.2
Warm Springs	433.8	139.6	299.4	872.8	7735.7	10858.7	2757.0	21351.4	1946.8	7503.7	1184.7	10635.2	81.8	488.1	13.7	583.6	677.9	1446.2	580.6	2704.7
Garden Creek	-0-	-0-	-0-	-0-	3211.1	9491.3	4934.9	17637.3	790.3	1217.0	864.5	2871.8	-0-	-0-	-0-	-0-	1.2	17.0	-0-	18.2
Bald Mountain Burn	-0-	-0-	-0-	-0-	250.4 (83.8)	2127.1	4545.8	6923.3	430.5 (94.6)	2601.5	1016.3	4048.3	-0-	-0-	-0-	-0-	19.6	137.8	-0-	157.4
Thompson Creek	-0-	-0-	-0-	-0-	19.6	370.7	154.4	544.7	361.3	1660.7	575.9	2597.9	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Split Hoof	-0-	-0-	-0-	-0-	1046.0	3137.1	2277.6	6460.7	110.9	168.7	13.9	293.5	-0-	-0-	-0-	-0-	6.5	0.9	-0-	7.4
Squaw Creek	-0-	-0-	-0-	-0-	388.7	616.8	393.4	1398.9	585.2	1076.7	991.4	2653.3	22.8	160.2	155.6	338.6	-0-	-0-	-0-	-0-
Spud Creek	-0-	-0-	-0-	-0-	890.5	1314.4	2586.7	4791.6	338.7	509.5	-0-	848.2	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Pine Creek	-0-	-0-	-0-	-0-	191.0	721.8	432.7	1345.5	590.3	1681.3	120.3	2391.9	70.8	166.7	-0-	237.5	-0-	-0-	-0-	-0-
East Fork	-0-	-0-	-0-	-0-	421.9	2338.3	1745.5	4505.7	438.6	2057.3	1712.5	4208.4	19.4	44.5	-0-	63.9	-0-	-0-	-0-	-0-
Sullivan Creek	-0-	1.9	-0-	1.9	42.9	116.2	60.4	219.5	601.9	788.0	257.6	1647.5	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Malm Gulch	-0-	227.1	12.4	239.5	4527.6	1988.9	25.9	6542.4	64.2	57.9	-0-	122.1	-0-	-0-	-0-	-0-	127.4	101.0	435.6	664.0
Totals:																				
Site/ Condition Class	630.0	495.7	1155.0	2280.7	33843.3	45233.6	36804.2	115881.1	21878.1	40190.5	10851.7	72920.3	482.2	1353.7	245.1	2081.0	4237.6	5326.3	2738.9	12302.8
Seedings			16.8				2269.9												9.6	
Burn					83.8				94.6											

TABLE 3-4 (Cont.)

VEGETATION CONDITION BY ALLOTMENT AND VEGETATION TYPE AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION 1/

	Three Tip Sagebrush (ARTR4)				Mountain Mahogany (CELE3)				Shadscale Saltbush (ATCO)				Nuttall Saltbush (ATNU)			
	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total
Red Lake	782.4	812.2	200.6	1795.2	25.3	112.9	-0-	138.2	1469.3	403.8	1502.6	3375.7	19.8	5.0	97.7	122.5
Herd Creek	562.0	153.6	-0-	715.6	-0-	-0-	-0-	-0-	268.8	285.0	453.8	1007.6	-0-	-0-	-0-	-0-
Road Creek	340.7	774.5	151.9	1267.1	-0-	-0-	-0-	-0-	18.9	368.2	22.0	409.1	-0-	-0-	-0-	-0-
Bruno Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Round Valley	13.6	-0-	-0-	13.6	-0-	-0-	-0-	-0-	4166.4	1388.5	2348.0	7902.9	6.2	-0-	14.1	20.3
San Felipe Seedings	1716.5	3262.8	1508.6 (2.4)	6487.9	317.8	1977.3	542.6	2837.7	306.1	864.6	732.7	1903.4	11.2	18.1	606.7 (817.6)	636.0
Warm Springs	1843.6	2608.0	613.2	5064.8	366.7	445.9	134.2	946.8	9489.4	3684.5	1343.6	14517.5	57.4	0.1	271.4	328.9
Garden Creek	822.1	827.5	1041.6	3691.2	-0-	-0-	-0-	-0-	199.1	456.8	1459.1	2115.0	-0-	-0-	-0-	-0-
Bald Mountain Burn	106.9	1057.6	1084.7	2249.2	-0-	50.7	-0-	50.7	-0-	-0-	309.9	309.9	-0-	-0-	8.3	8.3
Thompson Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Split Hoof	289.3	216.3	3.4	509.0	-0-	-0-	-0-	-0-	-0-	130.7	334.5	465.2	-0-	-0-	-0-	-0-
Squaw Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Spud Creek	258.3	564.1	1.7	824.1	-0-	-0-	-0-	-0-	-0-	-0-	186.1	186.1	-0-	-0-	-0-	-0-
Pine Creek	140.2	341.3	-0-	481.5	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
East Fork	6.7	127.0	53.1	186.8	-0-	-0-	-0-	-0-	-0-	147.1	79.3	226.4	-0-	-0-	0.8	0.8
Sullivan Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Malm Gulch	14.3	5.4	24.1	43.8	5.4	41.8	64.3	111.5	378.2	20.4	91.1	489.7	-0-	-0-	-0-	-0-
Totals :																
Site/ Condition Class	6896.6	11750.3	4682.9	23329.8	715.2	2628.6	741.1	4084.9	16296.2	7749.6	8862.7	32908.5	94.6	23.2	999.0	1116.8
Seedings			2.4												817.6	
Burn																

TABLE 3-4 (Cont.)

VEGETATION CONDITION BY ALLOTMENT AND VEGETATION TYPE AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION 1/

	Nuttall Tansy (TANU)				Semi-wet Meadow (Semi-wet Meadow)				Riparian Semi-wet Stream Bottom				Douglas Fir (PSME)	Rock
	Good	Fair	Poor	Total	Good	Fair	Poor	Total	Good	Fair	Poor	Total		
Red Lake	303.6	463.9	672.6	1440.1	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1708.6	1831.5
Herd Creek	79.1	14.0	-0-	93.1	138.9	-0-	-0-	138.9	-0-	-0-	-0-	-0--	2240.4	2743.4
Road Creek	-0-	-0-	-0-	-0-	47.3	-0-	-0-	47.3	-0-	-0-	-0-	-0-	101.3	1984.2
Bruno Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	1201.4	70.4
Round Valley	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	8.2	910.7
San Felipe Seedings	2291.4	1828.9	5492.7	9613.0	88.5	57.1	35.6	181.2	-0-	-0-	-0-	-0-	4314.5	2092.7
Warm Springs	110.8	241.6	29.8	382.2	25.2	-0-	2.3	27.5	-0-	-0-	-0-	-0-	627.8	1659.8
Garden Creek	1.9	4.2	-0-	6.1	-0-	-0-	-0-	-0-	-0-	73.8	-0-	73.8	1907.0	2138.0
Bald Mountain Burn	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	44.5	19.7	-0-	64.2	4639.7 (11.0)	3947.2
Thompson Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	37.2	-0-	37.2	1440.1	975.1
Split Hoof	42.3	17.7	23.7	83.7	-0-	-0-	-0-	-0-	-0-	92.3	-0-	92.3	-0-	503.2
Squaw Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	57.3	-0-	-0-	57.3	930.6	1670.6
Spud Creek	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	22.5	-0-	22.5	840.8	1342.7
Pine Creek	-0-	-0-	5.6	5.6	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	205.4	358.6
East Fork	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	113.9	-0-	113.9	926.2	1486.3
Sullivan Creek	-0-	-0-	-0-	-0-	-0-	17.4	11.7	29.1	-0-	-0-	-0-	-0-	1329.7	341.0
Malm Gulch	13.6	29.3	188.9	231.8	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	70.2	621.9
Totals:														
Site/ Condition Class Seedings	2842.7	2599.6	6413.3	11855.6	299.9	74.5	49.6	424.0	101.8	359.4	-0-	461.2	22491.9	24677.3
Burn													11.0	

1/ For methodology used in predicting changes in condition see Appendix 2-A

TABLE 3-5

PRESENT VEGETATION CONDITION AND FUTURE CONDITION AFTER 15 YEARS UNDER PROPOSED ACTION (Acres) 1/

Allotment	Good		Fair		Poor		Douglas Fir	Rock	Burn
	Present	Future	Present	Future	Present	Future	Present & Future	Present & Future	Present
Red Lake	2,186	7,111	9,217	6,163	8,251	6,380	1,709	1,832	-
Herd Creek	8,292	10,766	6,637	5,584	2,138	717	2,240	2,743	-
Road Creek	1,800	3,869	9,430	7,431	2,250	2,180	101	1,984	-
Bruno Creek	494	683	537	414	76	10	1,201	70	-
Round Valley	6,010	8,299	3,978	1,689	2,596	2,596	8	911	-
San Felipe	3,370	16,871	32,272	28,775	39,267	29,263	4,314	2,093	-
Warm Springs	5,063	22,769	36,513	27,419	15,839	7,227	628	1,660	-
Garden Creek	699	5,026	16,726	13,087	8,988	8,300	1,907	2,138	-
Bald Mountain	327	852	5,977	5,994	7,507	6,965	4,640	3,888	189
Thompson Creek	276	381	2,119	2,069	785	730	1,440	975	-
Split Hoof	-	1,495	5,153	3,764	2,759	2,653	-	503	-
Squaw Creek	760	996	1,036	1,853	2,651	1,598	931	1,671	-
Spud Creek	307	1,488	3,568	2,410	2,797	2,774	841	1,343	-
Pine Creek	-	992	3,903	2,911	559	559	205	359	-
East Fork	61	887	4,861	4,828	4,384	3,591	927	1,486	-
Sullivan Creek	4	645	1,383	923	512	331	1,330	341	-
Malm Gulch	4,166	5,130	2,130	2,532	2,208	842	70	622	-
Totals	33,815	88,260	145,440	117,846	103,567	76,716	22,492	24,619	189

1/ For methodology used in predicting changes in conditions see Appendix 2-F.

TABLE 3-6

PRESENT APPARENT TREND AND PREDICTED TREND AFTER 15 YEARS UNDER PROPOSED ACTION 1/
(Acres)

Allotment	Up		Down		Static		Douglas Fir, Burn and Rock	Total
	Present	Future	Present	Future	Present	Future		
Red Lake	-0-	6,797	3,630	-0-	16,024	12,857	3,541	23,195
Herd Creek	-0-	-0-	570	570	16,497	16,497	4,983	22,050
Road Creek	-0-	2,140	4,789	-0-	8,691	11,340	2,085	15,565
Bruno Creek	-0-	255	-0-	-0-	1,107	852	1,271	2,378
Round Valley	-0-	2,289	-0-	-0-	12,614	10,296	919	13,503
San Felipe	3,960	27,468	24,500	-0-	46,449	47,440	6,407	81,316
Warm Springs	-0-	26,318	23,450	-0-	33,965	31,097	2,288	59,703
Garden Creek	-0-	5,013	6,970	-0-	19,443	21,400	4,045	30,458
Bald Mountain	3,670	4,737	2,630	-0-	7,511	9,074	8,726	22,597
Thompson Creek	2,020	2,181	520	-0-	640	999	2,415	5,595
Split Hoof	-0-	1,600	2,600	-0-	5,312	6,312	503	8,415
Squaw Creek	-0-	1,290	650	-0-	3,797	3,157	2,597	7,044
Spud Creek	620	1,823	-0-	-0-	6,052	4,849	2,184	8,856
Pine Creek	-0-	992	-0-	-0-	4,462	3,470	564	5,026
East Fork	2,520	4,138	-0-	-0-	6,786	5,168	2,404	11,715
Sullivan Creek	-0-	822	1,648	-0-	250	1,076	1,672	3,570
Malm Gulch	-0-	2,385	1,020	-0-	7,425	6,060	691	9,136
Totals	12,790	94,144	72,977	570	197,055	188,107	47,300	330,122

1/ See Appendix 2-F for methodology for predicting future changes in trend.

TABLE 3-7

PERCENT GROUND COVER OCCUPIED BY VEGETATION AND LITTER PRESENTED BY VEGETATION TYPE AND ALLOTMENT.
DATA PRESENTED FOR PRESENT SITUATION AND FOR THE SITUATION AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION.

		ARTRT		ARTRW		ARTRV		ARARA		ARARN		ARTR4		CELE3	
		% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future
Red Lake	% live veg. cover	16	18	14	16	28	33	-	-	16	21	15	21	23	23
	% litter*	14	16	9	10	23	27	-	-	9	12	13	18	14	14
Herd Creek	% live veg. cover	35	40	20	22	33	36	29	32	-	-	23	23	-	-
	% litter*	14	16	9	10	23	25	19	21	-	-	13	13	-	-
Road Creek	% live veg. cover	23	24	15	17	30	32	34	34	-	-	18	20	-	-
	% litter*	14	15	9	10	23	24	19	19	-	-	13	14	-	-
Bruno Creek	% live veg. cover	-	-	22	23	33	36	-	-	-	-	-	-	-	-
	% litter*	-	-	9	9	23	25	-	-	-	-	-	-	-	-
Round Valley	% live veg. cover	17	19	23	24	41	41	-	-	-	-	25	25	-	-
	% litter*	14	16	9	9	23	23	-	-	-	-	13	13	-	-
San Felipe	% live veg. cover	14	16	12	14	26	30	19	26	18	24	17	19	22	22
	% litter*	14	16	9	10	23	26	19	26	9	12	13	14	14	14
Warm Springs	% live veg. cover	22	28	15	18	24	29	19	27	19	21	18	20	22	23
	% litter*	14	18	9	11	23	28	19	27	9	10	13	14	14	15
Garden Creek	% live veg. cover	-	-	14	15	27	29	-	-	21	22	17	19	-	-
	% litter*	-	-	9	10	23	25	-	-	9	9	13	14	-	-
Bald Mountain	% live veg. cover	-	-	12	12	27	28	-	-	21	23	16	17	23	23
	% litter*	-	-	9	9	23	24	-	-	9	10	13	14	14	14
Thompson Creek	% live veg. cover	-	-	14	14	28	28	-	-	-	-	-	-	-	-
	% litter*	-	-	9	9	23	23	-	-	-	-	-	-	-	-
Split Hoof	% live veg. cover	-	-	13	15	28	32	-	-	21	33	18	22	-	-
	% litter*	-	-	9	10	23	26	-	-	9	14	13	16	-	-
Squaw Creek	% live veg. cover	-	-	16	16	24	28	18	22	-	-	-	-	-	-
	% litter*	-	-	9	9	23	27	19	23	-	-	-	-	-	-
Spud Creek	% live veg. cover	-	-	13	14	30	33	-	-	-	-	18	20	-	-
	% litter*	-	-	9	10	23	25	-	-	-	-	13	14	-	-
Pine Creek	% live veg. cover	-	-	13	15	28	31	26	29	-	-	18	20	-	-
	% litter*	-	-	9	10	23	25	19	21	-	-	13	14	-	-
East Fork	% live veg. cover	-	-	13	14	24	26	26	29	-	-	17	17	-	-
	% litter*	-	-	9	10	23	25	19	21	-	-	13	13	-	-
Sullivan Creek	% live veg. cover	11	30	13	16	26	34	-	-	-	-	-	-	-	-
	% litter*	14	38	9	11	23	30	-	-	-	-	-	-	-	-
Malm Gulch	% live veg. cover	11	29	20	22	30	35	-	-	10	12	18	19	19	20
	% litter	14	37	9	10	23	27	-	-	9	11	13	14	14	15

* Litter is assumed to change at the same rate as the live vegetation cover.

TABLE 3-7 (cont.)

PERCENT GROUND COVER OCCUPIED BY VEGETATION AND LITTER PRESENTED BY VEGETATION TYPE AND ALLOTMENT.
DATA PRESENTED FOR PRESENT SITUATION AND FOR THE SITUATION AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION.

		ATCO		ATNU		TANU		Semi-wet Meadow		Semi-wet Stream		PSME
		% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future	% Present	% Future	Present & Future will be the same %
Red Lake	% live veg. cover	8	10	6	7	20	21	–	–	–	–	40
	% litter*	9	11	4	5	7	7	–	–	–	–	40
Herd Creek	% live veg. cover	9	9	–	–	24	26	76	90	–	–	40
	% litter*	9	9	–	–	7	8	5	6	–	–	40
Road Creek	% live veg. cover	10	10	–	–	–	–	60	90	–	–	40
	% litter*	9	9	–	–	–	–	5	8	–	–	40
Bruno Creek	% live veg. cover	–	–	–	–	–	–	–	–	–	–	40
	% litter*	–	–	–	–	–	–	–	–	–	–	40
Round Valley	% live veg. cover	10	11	6	8	–	–	–	–	–	–	40
	% litter*	9	10	4	5	–	–	–	–	–	–	40
San Felipe	% live veg. cover	8	9	5	5	20	21	45	69	–	–	40
	% litter*	9	10	4	4	7	7	5	8	–	–	40
Warm Springs	% live veg. cover	10	13	6	7	22	23	60	85	–	–	40
	% litter*	9	12	4	5	7	7	5	7	–	–	40
Garden Creek	% live veg. cover	7	7	–	–	23	24	–	–	30	45	40
	% litter*	9	9	–	–	7	7	–	–	30	30	40
Bald Mountain	% live veg. cover	5	5	5	5	–	–	–	–	46	55	40
	% litter*	9	9	4	4	–	–	–	–	30	36	40
Thompson Creek	% live veg. cover	–	–	–	–	–	–	–	–	30	45	40
	% litter*	–	–	–	–	–	–	–	–	30	45	40
Split Hoof	% live veg. cover	6	6	–	–	22	23	–	–	30	45	40
	% litter*	9	9	–	–	7	7	–	–	30	45	40
Squaw Creek	% live veg. cover	–	–	–	–	–	–	–	–	60	60	40
	% litter*	–	–	–	–	–	–	–	–	30	30	40
Spud Creek	% live veg. cover	5	5	–	–	–	–	–	–	30	45	40
	% litter*	9	9	–	–	–	–	–	–	30	45	40
Pine Creek	% live veg. cover	–	–	–	–	18	18	–	–	30	45	40
	% litter*	–	–	–	–	7	7	–	–	30	45	40
East Fork	% live veg. cover	8	8	5	5	–	–	–	–	–	–	40
	% litter*	9	9	4	4	–	–	–	–	–	–	40
Sullivan Creek	% live veg. cover	–	–	–	–	–	–	30	48	–	–	40
	% litter*	–	–	–	–	–	–	5	8	–	–	40
Malm Gulch	% live veg. cover	13	13	–	–	19	19	–	–	–	–	40
	% litter	9	9	–	–	7	7	–	–	–	–	40

TABLE 3-8

PRESENT TOTAL BIOMASS PRODUCTION COMPARED TO PALATABLE FORAGE PRODUCTION, PROPOSED STOCKING RATES, AND POTENTIAL PALATABLE FORAGE PRODUCTION
(Pounds of Production on an Annual Basis)

ALLOTMENT	Present total Biomass Production	Future Biomass After 15 Years Under Proposed Action	Present lbs. Palatable Forage*	Stocking Rate-lbs.**	Potential lbs. Palatable Forage***
Red Lake	8,980,821	9,291,286	7,189,091	1,181,600	8,923,636
Herd Creek	10,123,038	9,256,013	9,327,273	1,600,800	9,738,182
Road Creek	6,004,561	6,139,038	5,498,182	916,800	5,818,182
Bruno Creek	1,009,762	1,019,942	909,091	136,000	894,545
Round Valley	4,481,420	4,437,088	3,174,545	456,800	3,640,000
San Felipe	31,498,126	34,110,673	29,218,182	3,762,400	36,792,727
Warm Springs	22,961,630	25,440,677	19,869,091	3,192,800	24,803,636
Garden Creek	10,786,678	10,945,753	9,880,000	1,496,800	11,054,545
Bald Mountain	7,061,789	6,212,153	6,400,000	1,133,600	7,298,182
Thompson Creek	2,109,136	2,128,727	1,894,545	320,000	2,149,091
Split Hoof	3,017,488	2,914,045	2,618,182	378,400	2,894,545
Squaw Creek	2,220,606	2,622,268	1,850,909	415,200	2,701,818
Spud Creek	2,845,777	2,919,416	2,530,909	482,400	2,810,909
Pine Creek	2,412,855	2,469,265	2,214,545	321,600	2,392,727
East Fork	4,354,434	4,348,126	3,949,091	496,000	4,836,364
Sullivan Creek	1,233,765	1,294,853	1,192,727	215,200	1,330,909
Malm Gulch	3,218,512	3,307,266	2,454,545	-0-	2,796,364
Total	124,320,398	128,856,589	110,170,908	16,506,400	130,876,362

*This Column represents total present forage that is palatable and could be used (in any amount) by cattle, horses, or big game. The figures are calculated using a spring season average proper use factor of 22 percent. The total for this Column is directly related to the total AUM figure for spring grazing shown on Table 2-3 (110,170,908 ÷ 800 X .22 = 30,297). Suitability criteria has not been applied to these calculations.

**This is the amount of forage required to provide forage for the proposed level of grazing for livestock, wildlife, and wild horses.

***These figures represent the potential palatable forage with vegetation in good condition class as shown on Table 2-3 (130,876,362 ÷ 800 X .22 = 35,991 AUM's). Suitability criteria has not been applied to these calculations.

Sediment Yield. Improved vegetation cover would change sediment yield under the proposed action from an average of 1.32 ton per acre to 0.87 tons per acre. In total tons this would be a reduction of 149,000 tons for the Challis Unit (see Table 3-9). Short-term sediment yield could increase to 1.45 tons per acre annually on the 1,310 acres proposed for plowing, if heavy rains occurred before vegetation cover was restored. On the area proposed for burning, there would be a potential for two tons per acre sediment yield on 1,000 acres until stabilization. The reduction in loss of soil resulting from increased vegetation cover would maintain productivity of the soil. Increased deposition of litter would also improve the soil structure and increase productivity of soils as the litter decomposes increasing the nutrient content of soils.

TABLE 3-9

ESTIMATED ANNUAL SEDIMENT YIELD AFTER 15 YEARS
AS A RESULT OF THE PROPOSED ACTION

Allotment	Acres	Total Sediment (Tons)	Average Tons/Acre
Red Lake	23,195	15,502	.67
Herd Creek	22,050	16,633	.75
Road Creek	15,565	12,637	.81
Bruno Creek	2,378	1,332	.56
Round Valley	13,503	8,773	.65
San Felipe	81,316	85,049	1.05
Warm Springs	59,703	48,347	.81
Garden Creek	30,458	26,875	.88
Bald Mountain	22,597	21,191	.94
Thompson Creek	5,595	5,014	.90
Split Hoof	8,415	8,130	.97
Squaw Creek	7,044	5,214	.74
Spud Creek	8,856	7,979	.90
Pine Creek	5,026	4,701	.94
East Fork	11,715	12,739	1.09
Sullivan Creek	3,570	2,521	.71
Malm Gulch	9,136	5,450	.60
Totals	330,122	288,087	.87

Wildlife

Beneficial and adverse impacts to native fauna are presented in two parts, terrestrial and aquatic. General impacts affecting all species are discussed first, followed by animal specific or group specific impacts. A summary of significant impacts to terrestrial and aquatic wildlife resulting from the proposed action can be found in Tables 3-10 and 3-11.

Terrestrial.

Introduction. Adverse or negative impacts to terrestrial wildlife are defined as any environmental change which reduces population size below the existing carrying capacity of the environment, increases population size above carrying capacity, or reduces existing carrying capacity. Similarly, a beneficial or positive impact may be defined as environmental change which restores depleted or oversized populations to carrying capacity or increases carrying capacity for the species being considered (Thompson, 1977). Causes of adverse and beneficial impacts can be grouped into four main catagories: 1) habitat alteration; 2) animal displacement; 3) changes in birth and death rates; and 4) stress to animals. Either singlely or in combination, they affect the carrying capacity and/or population. Figure 3-1 illustrates this cause and effect relationship. The following discussion pertaining to impacts to wildlife will follow the above rationale. Short-term impacts are considered to be from 1-5 years. Impacts referred to as long-term are for a 5-15 year time frame.

There are 291 terrestrial wildlife species using the Challis ES area. Their populations are influenced by many environmental variables. Such environmental variables include, but are not limited to, quality and quantity of food, water, and cover (resting, nesting, hiding, thermal, etc.), climatic conditions, disease, social interactions, predation and man's activities, including regulatory activities. The Challis ES area contains only some of the variables since many of the animals only inhabit the area for part of the time. As some or all of the variables change, so do annual or long-term populations. How much the population changes or fluctuates is usually dependent upon the most limiting variable.

In some cases, mostly localized populations of rodents and birds, the proposed action as a whole, or a discrete action, may be a limiting factor and cause population change. However, neither the proposed action nor any of the discrete actions singularly are expected to be a significant enough variable or limiting factor to cause population changes in big game animals. Therefore, quantification will not be attempted for numbers of animals impacted. Instead changes in acres of habitat will be quantified.

General Impacts. The most common cause/effect impact relationship relating to all wildlife in the Challis ES Area is the subtle disappearance and replacement of wildlife species as vegetation composition and structure are changed or altered. As the plant communities change vegetation composition and structural stages, the wildlife using them also change. In order to identify the displacement (and/or removal) and replacement of wildlife species effected by the separate entities of the proposed action refer to Appendices 4-A, 4-B, 4-C, 4-D and instructions, Appendix 4-E. The degree of impacts from habitat alteration to individual species is dependent upon: 1) the tolerance of the species to the stresses imposed from habitat alteration; 2) the effects of habitat alteration on birth and death rates; 3) the degree of vegetation disturbance; and 4) availability of adjacent habitats and vacant niches in them. Displacement (or removal) and replacement of wildlife is not expected to be a widespread impact to single wildlife species or groups of species in the Challis Unit as a whole, but it will occur on a site specific basis throughout the ES Area as a result of the proposed action. It would occur in pastures and allotments that would have ecological condition classes advanced or retarded as a result of the proposed action and it would occur with vegetation manipulation practices. Appendices 4-A, 4-B and 4-C also indicate, by species, which life requirements (food, water, cover) of each species would be impacted as a result of removal or disturbance of vegetation and/or the presence of livestock.

The proposed allocation would benefit several terrestrial wildlife species because the amount of forage consumed by wild horses and livestock would be reduced. This would hold true for all of the allotments except Herd Creek., Round Valley, Pine Creek, and Sullivan Creek. These allotments would be allocated additional livestock AUMs (refer to Table 3-15). The proposed action has the potential for providing additional forage for all big game, rodents, insects and seed-eating birds (Appendices 4-B and 4-C). Quantity and quality of improved animal habitat would depend on the ability of individual plant communities to respond to the reduction in grazing by cattle and horses and other proposed grazing management programs. Improved habitat would decrease stress to all species dependent on terrestrial vegetation for food and cover which in turn would reduce displacement and mortality. Birth rates would be expected to be enhanced, increasing populations and/or species diversity.

Allotments on which grazing systems are proposed would have both adverse and beneficial impacts to terrestrial wildlife. Allotments that propose grazing systems which would provide seasonal or annual rest (Table 1-7) would, on a short-term basis, in the rest (1 year) or deferred pastures (1 season), benefit wildlife species through improved habitat quality and quantity. These pastures would provide forage on a non-competitive basis for big game, rodents and insects (Appendix 4-C). Additional cover will be

provided for rodents and ground nesting birds (Appendices 4-B and 4-C). The nonuse pastures would also provide areas where wildlife species would not have to interact physically (nest trampling, etc.), competitively (forage), and socially with livestock. Therefore, deferred or rested pastures, on a short-term basis (either for a season or one complete year), would be expected to 1) increase habitat condition; 2) increase carrying capacities; 3) decrease stress; 4) decrease displacement; and 5) decrease mortality and enhance birth rates of those species associated with the vegetation type where the system occurs. Increased population levels would be expected to increase for species with shorter reproduction cycles (mice, rabbits, insects, etc.)

Allotments presently in fair and good condition and in higher rainfall zones would be expected to advance vegetation an ecological condition class. This would enhance the beneficial impacts to terrestrial wildlife from increased forage and cover associated with the rest pastures, on a long-term basis (15 years). However, it is doubtful that the proposed rest rotation systems, and possibly the deferred systems, would significantly advance an ecological condition class within 15 years in those areas presently in poor condition, having less than 13 inches of rainfall, and continued turnout dates prior to the proper phenological development of the plants (less than 20 percent of the area). Grazing systems meeting this criteria would be expected to produce the short-term beneficial impacts caused by increased forage and cover in the rest or deferred pastures, but not significant increases in ecological condition of vegetation on a long-term basis. Martin and Ward (1976) concluded that perennial grasses responded inconsistently to alternate year seasonal rest when utilized at 60, 51, and 64 percent, and they suggest that alternate year rest schedules do not provide enough growing season recovery time between grazing seasons. Mueggler (1975) found that Idaho fescue requires about three years protection to regain full vigor and if in a state of low vigor will take five years of protection and then only produces two-thirds as much herbage and flower stalks when 70 percent of the herbage is removed. He also found that bluebunch wheatgrass of moderately low vigor may require at least six years of protection to recover full vigor when 50 percent of the herbage is removed.

Allotments and pastures having turnout dates during May (Table 1-7) would create wildlife-livestock interactions during one of the most crucial times for a majority of the wildlife species: reproduction (late fetal development, birth, rearing of new born and lactation). Ground nesting birds, birds nesting in low shrubs, strutting and nesting sage grouse, and small mammals are a few of the species and groups of species that would be impacted (Buttery, et. al., 1975). Animals recovering from winter stress conditions will also be adversely impacted. Adverse impacts during this early spring period are caused mainly by removal and/or disturbance of vegetation and trampling of fauna. Effects to impacted species are

increased stress, displacement (short- and long-term), increased deaths, decreased survival of newborn, and increased habitat alteration, all of which could decrease carrying capacities and populations.

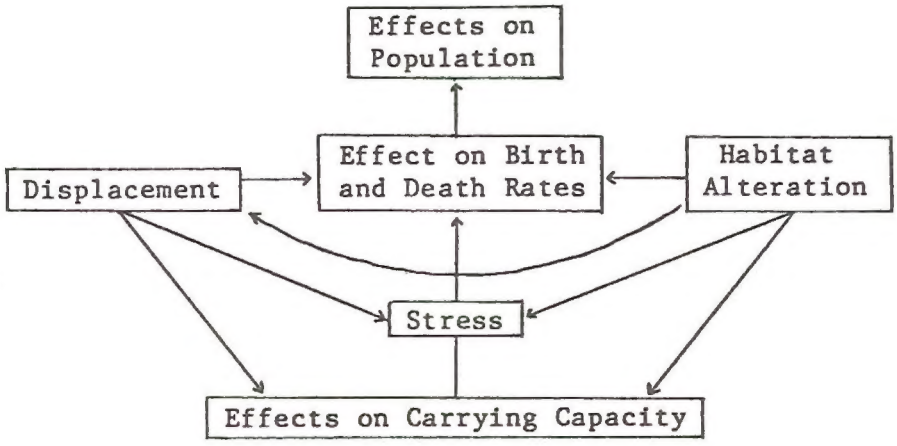
Proposed range improvements would have beneficial and adverse impacts on wildlife. Water developments would enhance most species habitat where water is presently lacking, especially during summer months. Leaving water systems functioning, after livestock are removed from the use pastures and allotments, would provide additional water for wildlife. Water developments and springs that are fenced would provide excellent habitat for birds and small mammals (refer to Appendices 4-B and 4-C for animals associated with wet meadows and riparian zones). These areas would provide a non-competitive (from livestock and horses) source of food as well as good hiding, resting, and nesting cover. It also could provide a good area of prey for hunting predators and raptors. The following beneficial impacts could occur: increased habitat quality and quantity, increase carrying capacity of immediate and adjacent habitat, reduce stress to most animals using the area, reduce displacement, lower water based mortality and potentially provide increased populations and wildlife diversity. The opposite impacts would occur on small areas around watering areas where livestock and horses habitually congregate for water.

Prescribed burns, reseeding and brush beating projects would have site specific impacts to localized populations of wildlife, especially small mammals, reptiles and birds having small home ranges. Wildlife species associated with the new vegetation composition and structure would be gained and those dependent upon the removed vegetation would be lost. For example, birds associated with low brush for resting and nesting (Appendix 4-B) would be displaced during a browse beating project and those species associated with increased grasses and other ground cover for foraging, nesting, and resting (Appendix 4-B) would become part of the new micro-environment. Appendix 4 describes how to predict which species would be adversely and beneficially impacted as a result of replacement and displacement.

The proposed action fails to provide a means for alleviating the excessive use and congregation by livestock, and wild horses in the riparian zones and wet meadows (0.2% of ES area), except in those areas proposed for fencing. Consequently, no change in impacts to unfenced areas would occur to the 160-170 wildlife species dependent upon the life requirements (food, water, cover) associated with riparian vegetation. Trampling and heavy grazing within this important wildlife habitat will continue to cause stress and displacement, habitat alteration, and reduced carrying capacities, all of which will continue to lower the potential wildlife species diversity and population. Those species affected are listed in Appendices 4-A, 4-B, and 4-C, by associating species needing wet meadows or riparian zones for reproduction or feeding.

FIGURE 3-1

MAJOR TYPE OF IMPACTS TO WILDLIFE
AND THEIR EFFECT ON CARRYING CAPACITY
(Thompson, 1977)



Species Specific Impacts.

Big Game. The Challis ES Area is rather unique in that even though it has four major big game species and livestock grazing within its boundaries, the two seldom interact. This is because a large percentage of the ES Area is characterized by steep slopes not normally used by cattle (Wittinger, 1978; Laver, 1976), much of the area is without water and not used by livestock, little big game use during times when livestock are on the range, the fact that antelope are the only big game species regularly concentrating in areas used by livestock and that approximately 50 percent of the big game habitat in the ES area is not used by livestock. These factors eliminate much of the magnitude of big game/livestock conflicts, such as dual foraging areas, social interaction, competition for early spring green-up and over use of winter ranges, normal to other areas in the intermountain region. The proposed action, through suitability classification, Appendix 2-C, reduction of livestock, and elimination or drastic reduction of livestock on bighorn sheep areas has further reduced the adverse impact to big game normally associated with livestock. Table 2-17 illustrates the percent of big game habitat that receives livestock use.

Deer. Although the majority of deer use can be found on slopes not used by cattle, there is some spring movement onto the lower slopes and bottomlands during mid-spring when the grasses begin to green-up. Some early competition for forage with cattle would continue to occur for a short time in all allotments where turnout dates would be prior to June 1, except Thompson Creek,

Round Valley, Sullivan Creek and Warm Springs Allotments. Reduction of livestock and wild horse numbers and allocation of forage will greatly reduce spring competition by providing additional forage. Young nutritious growth would be more available to pregnant and lactating does and those deer recovering from winter stresses. All factors considered, bottomland and lower slopes habitat used by deer in the spring would be expected to improve through reductions of livestock and wild horses and forage allocation; decreasing stress, displacement and mortality. It would also improve carrying capacity and increase potential birth rates.

Some wild horse/deer interaction presently occurs, especially between the mouth of Road Creek and Germer Basin. However, reduction of wild horses would reduce social interaction and provide additional habitat and forage if needed in the future.

Controlled burning in the East Fork Allotment will reduce marginal high elevation winter habitat for deer by eliminating 1,000 acres (less than one percent of the winter habitat) of browse. This would lower the winter carrying capacity or increase stress to wintering deer. It would cause some displacement. However, it will increase spring forage with succulent green-up. The burn area is a small part of the total winter range (five percent) and is not expected to significantly affect population levels or future IDF&G deer management goals in that particular area.

Fences constructed on deer migration routes in Squaw Creek, Split Hoof and San Felipe Allotments would cause some mortality until deer become accustomed to them. This is especially true for young animals unaccustomed to negotiating fences and animals in poor condition due to winter stress. Mortality and stresses from fences would be expected to decrease within 1-2 years and not be a significant long-term impact.

Brush heating treatments would decrease shrub composition on eight percent of the deer winter range in the Bald Mountain allotment. However, the treatment would be beneficial to deer since the present sagebrush stands, especially in the Centennial Flat area are composed of many unuseable decadent plants. Brush beating would be phased over a 12 year period to maintain winter carrying capacities for deer during the project. (See Table 1-7.) It would encourage sprouting and regrowth of sagebrush which is more palatable to deer. This would have significant beneficial impacts on pregnant and lactating does since young succulent plants growing in the brush beating areas provide the essential ingredients to enhance fetal development and lactation. There are plenty of other adjacent shrub areas for deer to disperse to during the project period. Brush beating projects would enhance deer spring habitat, reduce stress to pregnant does and animals recovering from winter, displace deer for a short time and then discourage further displacement and consequently increase carrying capacity and the potential for higher populations.

Potential land development, a secondary impact resulting from the proposed action, near the East Fork Allotment would have serious impacts on the deer that use this area. Private hay meadows presently used along the East Fork are important for spring deer use. Loss of these areas from housing developments and human associated harassment would decrease habitat and carrying capacity. Stress conditions, displacement, mortality and decreased birth rates could be expected, decreasing present populations.

The combination of beneficial and adverse impacts resulting from the proposed action is not expected to have significant impacts to present population levels or IDF&G 15 year goals. However, it would provide improved habitat condition, in about 15 years, for deer on those areas jointly used by livestock, horses and deer, approximately 33 percent of the deer habitat (Table 2-17). This would increase potential for maintenance of desired herd levels (372 additional deer) and for increased deer populations in the future if the IDF&G so desire. The proposed action would, in part, change 104,149 acres of mule deer habitat to a higher condition class. This would result in an increase of 97,309 acres of fair condition habitat and 1,765 acres of good habitat (refer to Table 3-12).

Elk. All the allotments where elk occur, except San Felipe, are used during winter and spring on a sporadic basis depending upon climatic conditions which force wintering populations on and off the area. Therefore, the impacts in these use areas would be sporadic. These areas are "fringe areas" of traditional spring and winter ranges. Impacts resulting from livestock grazing, early turnout, forage allocation and reduction of livestock would be similar to those discussed under general impacts and deer impacts. The proposed action would not affect present population levels or future population goals. However, increasing habitat conditions would be enhanced, increasing the potential for long-term maintenance of desired populations and future populations if desired by the IDF&G.

In the San Felipe Allotment the eastern, southeastern and southern boundaries are part of the elk migration route and receive some dual use (7,461 acres) by cattle and elk during the spring. The proposed decrease in stocking rates (Table 1-7) and implementation of grazing systems would have the following impacts in the use pasture: 1) Decreased competition for early spring forage in the use pastures would decrease stress to pregnant and lactating cows, decreasing the chance of mortality to fetuses and young. 2) Elk would be displaced when livestock use pastures occurring in the migration area. Several studies have shown elk avoid areas used by livestock (Skovlin, et. al., 1968; Knowles, 1975; Komberic, 1976; Mackie, 1970) because of the social intolerance of the two species. This factor would force elk to areas not normally used or accelerate migration through the allotment. This would potentially cause

cause elk to forage in areas that have not had forage allocated or cause them to spend longer than normal lengths of time in some of the use area. Consequently, the potential for overgrazing would occur. Displacement, stress and habitat alteration could occur. Beneficial impacts would occur when the pasture is rested. Elk would be free of social interaction and stress contributed to interactions.

Not developing water in the San Felipe Allotment in the traditional wintering area would continue to leave the area uninfluenced by livestock, eliminating potential adverse impacts.

The proposed BLM/Idaho Highway Department fence along Highway 93 on Willow Creek Summit would disect an elk migration route and crucial area. Mortality and harassment is expected since elk would be forced to negotiate a fence and at the same time dodge traffic. This would complicate normal crossing and escape activities. The proposed fence would impose stress to pregnant cows, young animals, and winter-stressed animals. Fence crossing impacts will be compounded when deep snows occur during winter months. Quality of habitat would be lessened.

The proposed action, as it relates to livestock, would not have any affect on the present elk populations in the Challis Unit nor would it adversely affect the IDF&G 15 year goals. However, the proposed action would expect to improve potential habitat conditions (Table 3-12). Future population maintenance of 50 additional animals and population increases, if desired, may be possible.

Wild horse reductions could potentially expand elk use areas in the adjacent lower elevations of the San Felipe Allotment. Horse reductions would reduce social interaction and improve habitat condition. The proposed action would be expected to reduce poor condition habitat by 5,164 acres and increase fair condition habitat by 3,399 acres and good habitat by 1,765 acres.

Antelope. Antelope in the ES Area would primarily benefit from the proposed actions. Allocations of forage and reduction of livestock numbers will improve habitat condition on areas used during spring months. Continued grazing by livestock will help to maintain sagebrush and tanacetum communities. Reduction of competition for succulent green grasses and forbs would occur where antelope and cattle interact in the spring. This would decrease stress to pregnant and lactating does and newborn fawns. Carrying capacities on these areas, at least for spring use, would be improved.

Reduction of wild horse numbers would reduce forage competition, social interaction, and, in general, improve quantity and quality of antelope habitat. Stress and displacement from social interaction would be reduced. Carrying capacities for antelope would increase.

Water developments would enhance summer antelope habitat by encouraging use in areas presently unavailable due to lack of water. Three water developments are proposed very near crucial winter use areas. These occur in the San Felipe and Warm Springs Allotments and could encourage more antelope to use part of their winter range during the summer. This would decrease carrying capacities on those crucial winter ranges, thus, reducing available forage, imposing stress to wintering animals, potentially increasing mortality and decreased birth rates.

Brush beating practices would decrease decadent stands of sagebrush. An increase in young sprouting sagebrush, succulent grasses and forbs would be expected while still maintaining good shrub composition. This beneficial habitat alteration will result in decreased stress accompanied with insufficient forage, thus increasing the carrying capacity.

Potential land developments, as discussed in the economic impacts, and associated human harassment are secondary impacts that would eliminate the antelope herd from the area in the Spud Creek Allotment. Development would adversely alter crucial habitat by imposing undue stress to wintering antelope through human associated activities causing displacement, increased mortality and decreased birth rates, and possibly the elimination of 140 antelope.

Fences in the San Felipe and Warm Springs Allotment, even though built to Bureau specifications, would cause some mortality during the initial adjustment period, about 1-2 seasons. This would be especially true to young animals who are not familiar with negotiating fences.

With the exception of potential subdivisions in Spud Creek, the proposed action is not expected to have significant impacts, beneficial or adverse, to existing populations or projected goals of the IDFG. It could, however, help maintain the 15 year goals and increase habitat quality for herd increase potential for larger numbers of antelope in the future if the IDF&G so desires. The proposed action would result in a decrease in poor condition winter range by 11,893 acres and summer range by 66,703 acres. Fair condition habitat would be increased by 10,301 acres on winter range and 66,703 on summer range. Good condition antelope habitat would be increased by 1,502 acres. In actual antelope numbers, this would abount to 250 wintering animals and 293 summer animals.

Bighorn Sheep. Elimination of livestock on all crucial bighorn sheep areas would benefit bighorn herds by eliminating social interaction and foraging competition. This would eliminate stress and displacement during crucial periods associated with livestock. Carrying capacity of the bighorn crucial range should increase. Any mortality related to past social conflicts and forage competition would be eliminated.

Few significant livestock associated impacts would be expected on the noncrucial bighorn winter and spring ranges. Recent research (Morgan, 1968; Laver, et. al., 1976), and observations, by the district biologist in the ES area, indicate that social impacts and foraging competition will be minimized, especially in the Ziegler Basin Area where conflicts were originally thought to be more severe. Cattle use is normally exclusive from bighorn use areas due to steep terrain and poor availability of accessable water. Areas where livestock and bighorn occasionally interact on spring ranges would produce the same adverse impacts discussed in the general wildlife, deer and elk sections related to competition for forage and social interaction. Overall, the proposed action would benefit bighorn habitat by increasing carrying capacities and increasing potential for population increases. Livestock conflicts would be minimized and the IDF&G would be able to meet present and future population projections, as well as maintenance, with the existing herds on the allotments presently containing bighorn sheep.

Proposed burning in the East Fork Allotment would benefit bighorn sheep. Shrub composition would be reduced and native grasses and forbs would increase providing additional forage. Carrying capacity would increase with increased quality and quantity.

The most detrimental impact to bighorn sheep in the East Fork Area could result from a secondary impact of the proposed action. If marginal livestock operators are forced to sell their land to land development organizations (see impacts, Socio-Economics), the bighorn sheep population in the East Fork could be eliminated. Howe (1973) and Hoover (personal correspondence) have studied the results of human habitation in Colorado near bighorn sheep ranges and indicated domestic dogs and other human harassment would have severe impacts to the bighorn herd on the East Fork. Human harassment would affect the viability of the herd, due to stress, and lower lamb survival. Development of lands would adversely affect IDFG's present and future population objectives.

With the exception of the secondary impacts caused by potential land development in the East Fork, the proposed action is not expected to have any adverse impacts on bighorn sheep populations or the objectives of the IDF&G to manage for them presently or in the future. The beneficial impacts discussed would increase 1,252 acres of good condition habitat and decrease 969 acres of poor habitat and 283 acres of fair condition habitat. The proposed action would also help IDF&G maintain desired populations of 220 bighorn sheep, 133 more than at present.

Gamebirds.

Sage Grouse. Reduction in livestock numbers and wild horses would potentially increase succulent forbs and grass shoots during spring and summer. However, competition for forage would still

exist. Reduction of livestock and wild horses would also reduce the probability of destruction to nests and birds from trampling. However, some trampling would continue. Grazing systems providing rest or deferred pastures, especially during spring would allow an undisturbed period for nesting and brood rearing in the unused pastures.

Brush beating practices as proposed would benefit sage grouse habitat by reducing portions of heavy density decadent stands of sagebrush and increasing grass forb composition and improving sagebrush age structure. This would benefit foraging bird and young, especially during spring and summer. Stresses from lack of good forage would be reduced. The number of increased birds cannot be predicted, however, it is expected carrying capacity would be increased. The possibility for increased populations will be enhanced.

Blue Grouse. Livestock and horse use of riparian zones and wet meadows would continue. This important part of the blue grouse habitat would continue to be abused due to the nature of cattle and wild horses staying in the riparian zone for shade and water. Brood rearing and nesting would continue to be impacted due to lack of cover and succulent forage. Population would be expected to stay at present levels, much below the potential of what the habitat would be capable of producing if it was in good condition.

TABLE 3-10

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE
AS A RESULT OF THE PROPOSED ACTION a/

	Habitat Alteration	Stress	Displace-ment	Carrying Capacity	Mortality	Birth Rate	Present Population	IDFG 15-year Goal b/	Maintenance of 15-year Goal
Allocation of Forage									
Non-game	+d	+d	+d	+i	+d	+i	+i	-	-
Deer	+d	+d	+d	+i	+d	+i	0	0	+i
Elk	+d	+d	+d	+i	+d	+i	0	0	+i
Antelope	+d	+d	+d	+i	+d	+i	+i	0	+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	0	0
Turn Out Dates									
Non-game	-*	-*	-*	-*	-*	-*	-*	-	-
Deer	-*	-*	-*	-*	-*	-*	0	0	0
Elk	-*	-*	-*	-*	-*	-*	0	0	-d
Antelope	-*	-*	-*	-*	-*	-*	0	0	-d
Bighorn Sheep	-*	-*	-*	-*	-*	-*	0	0	-d
Upland Game Birds	-*	-*	-*	-*	-*	-*	0	0	0
Grazing Systems Rest/ Use Pastures									
Non-game	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	+i/-*	-	-
Deer	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	0/-*	0/0*	0/-d
Elk	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	0/-*	0/0	+i/+i
Antelope	+d/0	+d/0	+d/0	+i/0	+d/0	+i/0	0/0	+i/0	+i/+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+d/-*	+d/-*	+d/-*	+i/-*	+d/-*	+i/-*	0	+i/+i	+i/+i
Ecological Condition Changes									
Non-game	+d	+d	+d	+i	+d	+i	0	-	-
Deer	+d	+d	+d	+i	+d	+i	0	0	+i
Elk	+d	+d	+d	+i	+d	+i	0	0	+i
Antelope	+d	+d	+d	+i	+d	+i	0	+i	+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	0	+i
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	0	+i
Social Interaction (reduction of cows and horses)									
Non-game	0	-d*	+d*	+i	+d	+i	0	-	-
Deer	0	-d*	+d*	+i	+d	+i	0	0	+i
Elk	0	-d*	+d*	+i	+d	+i	0	0	+i
Antelope	0	-d*	+d*	+i	+d	+i	0	0	+i
Bighorn Sheep	0	-d*	+d*	+i	+d	+i	0	0	+i
Upland Game Birds	0	-d*	+d*	+i	+d	+i	0	0	+i

TABLE 3-10

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE
AS A RESULT OF THE PROPOSED ACTION a/
(cont.)

	Habitat Alteration	Stress	Displace-ment	Carrying Capacity	Mortality	Birth Rate	Present Population	IDFG 15-year Goal b/	Maintenance of 15-year Goal
Use of Riparian Zones (cows and horses)									
Non-game	-i*	-i*	-i*	-d*	-i*	-d*	0	-	-
Deer	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Elk	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Antelope	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Bighorn Sheep	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Upland Game Birds	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Reduction in Wild Horses									
Non-game	+d	+d	+d	+i	+d	+i	+i	-	-
Deer	+d	+d	+d	+i	+d	+i	0	+i	+i
Elk	+d	+d	+d	+i	+d	+i	0	+i	+i
Antelope	+d	+d	+d	+i	+d	+i	0	+i	+i
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i
Water Developments									
Non-game	+d	+d	+d	+i	+d	+i	0	-	-
Deer	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	+d-i	+d-i	+d-i	+i-d	+d-i	+d-i	0	+d-i	+i-d
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i
Fence Construction									
Non-game	0	0	0	0	0	0	0	-	-
Deer	0	-i	-i	0	-i	0	0	0	0
Elk	0	-i	-i	0	-i	0	0	0	0
Antelope	0	-i	-i	0	-i	0	0	0	0
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds (Lake Creek and Herd Creek)	+d	+d	+d	+i	+d	+i	0	+i	+i
Brush Beating									
Non-game	+i-d	+d-i	+d-i	+i-d	+d-i	+i-d	+i-d	-	-
Deer	+d	+d	+d	+i	+d	+i	0	+i	+i
Elk	0	0	0	0	0	0	0	0	0
Antelope	+d	+d	+i	+i	+d	+i	0	+i	+i
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i

TABLE 3-10

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE
AS A RESULT OF THE PROPOSED ACTION a/
(cont.)

	Habitat Alteration	Stress	Displace-ment	Carrying Capacity	Mortality	Birth Rate	Present Population	IDFG 15-year Goal b/	Maintenance of 15-year Goal
Plow and Seed									
Non-game	-i	-i	-i	-d	-i	-d	-d	-	-
Deer	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	0	0	0	0	0	0	0	0	0
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	0	0	0	0	0	0	0	0	0
Burning									
Non-game	+i	-i	-i	+i	+d	+i	-d	-	-
Deer	-i	-i	-i	-d	-i	-d	-d	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	0	0	0	0	0	0	0	0	0
Bighorn Sheep	+i	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+i	+d	+d	+i	+d	+i	0	+i	+i
Land Development									
Non-game	0	0	0	0	0	0	0	0	0
Deer (East Fork)	-i	-i	-i	-d	-i	-d	0	-d	-d
Elk	0	0	0	0	0	0	0	0	0
Antelope (Spud Creek)	-i	-i	-i	-d	-i	-d	0	-d	-d
Bighorn Sheep (East Fork, Road Creek, and Spud Creek)	-i	-i	-i	-d	-i	-d	0	-d	-d
Upland Game Birds	0	0	0	0	0	0	0	0	0

a/ + = beneficial
- = adverse impact
d = decrease
i = increase
0 = no impact
* = impact presently occuring and will continue to occur

Example:	Stress	Mortality
Notation:	+d	-i*
Explanation:	Beneficial impact since stress is decreased.	Adverse impact since mortality is increased in degree by the proposed action but it is also occuring at the present time.

b/ Idaho Department of Fish and Game 15-year management goals are based on present habitat condition and population trends. If habitat is improved in the future, the population objectives may be increased in cooperation with BLM land use planning goals.

TABLE 3-11

PROJECTED BIG GAME HABITAT CONDITION IN 15 YEARS
IN THE CHALLIS ES AREA WITH THE PROPOSED ACTION A/

Allotment	Mule Deer B/ Habitat			Elk Habitat			Antelope Habitat B/ (Winter)			Antelope Habitat B/ (Summer)			Bighorn Sheep Habitat		
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	-	6,858	212	-	-	-	-	1,140	793	-	15,248	802			
Herd Creek	-	10,867	-	882	3,755	1,423	-	-	-	-	760	40			
Road Creek	6,856	6,534	-	-	333	-	-	-	-	2,865	7,395	540	237	1,375	547
Bruno Creek	648	162	-	-	106	521									
Round Valley	-	-	3,975	-	-	-	-	1,083	1,767	-	11,543	607			
San Felipe	-	10,992	7,328	-	20,252	1,066	-	5,088	2,740	-	64,201	3,379			
Warm Springs	-	6,461	966	-	-	-	-	2,189	2,468	-	53,720	2,830			
Garden Creek	-	26,540	-	-	415	-	-	2,689	-	-	2,555	134	52	2,446	132
Pine Creek	3,056	764	1,206	-	-	-									
Spud Creek	6,328	1,582		-	614	-	738	82	-	1,920	2,640	240	-	569	-
Split Hoof	-	9,140	-	-	-	-	-	-	-	-	6,935	365			
Thompson Creek	2,832	708	-	198	1,488	298									
Bald Mountain	-	9,238	3,772	-	63	166									
Squaw Creek	4,888	1,222	-	506	617	1,123									
East Fork	-	12,164	776	-	26	14							3,819	5,690	1,130
Sullivan Creek	40	2,974	1,006	-	678	129									
	24,648	106,206	19,241	1,586	28,347	4,740	738	12,271	7,768	4,785	164,997	8,937	4,108	10,081	1,809
Total Acres		150,095			34,674			20,777			178;719			15,998	
Percent of Total	17%	71%	12%	5%	82%	13%	4%	59%	37%	3%	92%	5%	25%	63%	11%

A/ Criteria for habitat condition classification can be found in Appendix 4-F.

B/ Much of the increased condition is due to the projected recovery of the winter kill on sagebrush that occurred in 1976-77.

TABLE 3-12

NET CHANGES IN BIG GAME HABITAT
RESULTING FROM THE PROPOSED ACTION

Habitat	Poor	Fair	Good
Mule Deer a/	-104,149	+97,309	+6,840
Elk	-5,164	+3,399	+1,765
Antelope (Winter)	-11,893	+10,301	+1,502
Antelope (Summer)	-66,703	+66,703	*
Big Horn Sheep	-969	-283	+1,252

a/ Much of the increased habitat condition is due to recovery of the winter killed sagebrush that occurred in 1976-66.

Note: - Decrease
+ Increase
* No Change

Aquatic. Implementation of the proposed action would result in an insignificant increase in anadromous fish production in the Challis Planning Unit. Fish habitat in most streams in the unit would improve slightly when livestock and wild horse use is reduced and grazing systems are implemented (Table 3-13). However, it must be realized that significant impacts to the anadromous fish and fish habitat resulting from management of adjacent lands over which BLM has no control would continue.

TABLE 3-13

PREDICTED IMPROVEMENT IN ANADROMOUS FISH HABITAT IN THE CHALLIS PLANNING UNIT RESULTING FROM THE PROPOSED ACTION

Stream 1/	Grazing System 2/	Relative Degree of Improvement Predicted
Salmon River	S, RR, DR	Slight 3/
Challis Creek	RR	Slight
Bayhorse Creek	RR	Slight
Thompson Creek	DR	Slight
Squaw Creek	DR	Slight
East Fork River	S, RR, DR	Slight
Road Creek	S	No Improvement
Herd Creek 4/	RR	Slight
Lake Creek 5/	RR	Moderate
Big Lake Creek	RR	Slight
Big Boulder Creek 6/	RR	No Improvement
Little Boulder Creek 6/	RR	No Improvement

1/ Fish habitat in smaller streams not used by anadromous fish would improve slightly.

2/ S=Seasonal
RR=Rest-rotation grazing or modified RR grazing
DR=Deferred-rotation grazing

3/ "Slight" is defined as some improvement within a habitat condition class. Present "poor" or "fair" conditions are not expected to improve to a higher classification.

4/ Improvement from "fair-good" to "good-excellent" by 1993 within fenced area but remainder of stream static in "fair-good" condition.

5/ Significant improvement within fenced area and slight improvement in remainder of stream.

6/ Big and Little Boulder Creeks have not and would not be impacted by grazing practices on BLM land.

The most serious factor responsible for small runs of anadromous fish in the unit is the heavy downstream mortality due to Snake and Columbia River Dams. As agencies work to reduce these losses, salmon and steelhead runs into the Challis area will increase. Stream dewatering for irrigation and unscreened irrigation diversions are also major limiting factors for anadromous fish production in the unit.

Grazing on public lands does not significantly degrade anadromous fish habitat in the unit, except in Herd, Lake and Road Creeks. On these streams, riparian vegetation removal and streambank trampling by livestock, wild horses and wildlife grazing along these streams has increased erosion and stream siltation, eliminated spawning sites, reduced salmonid egg survival, reduced fish food supplies and decreased stream shading. These grazing-induced effects all degrade fish habitat resulting in decreased fish production. Heavy livestock, wild horse and wildlife use of riparian areas is also responsible for much of the "poor" and "fair" habitat condition existing in resident trout streams in the unit (Table 2-23).

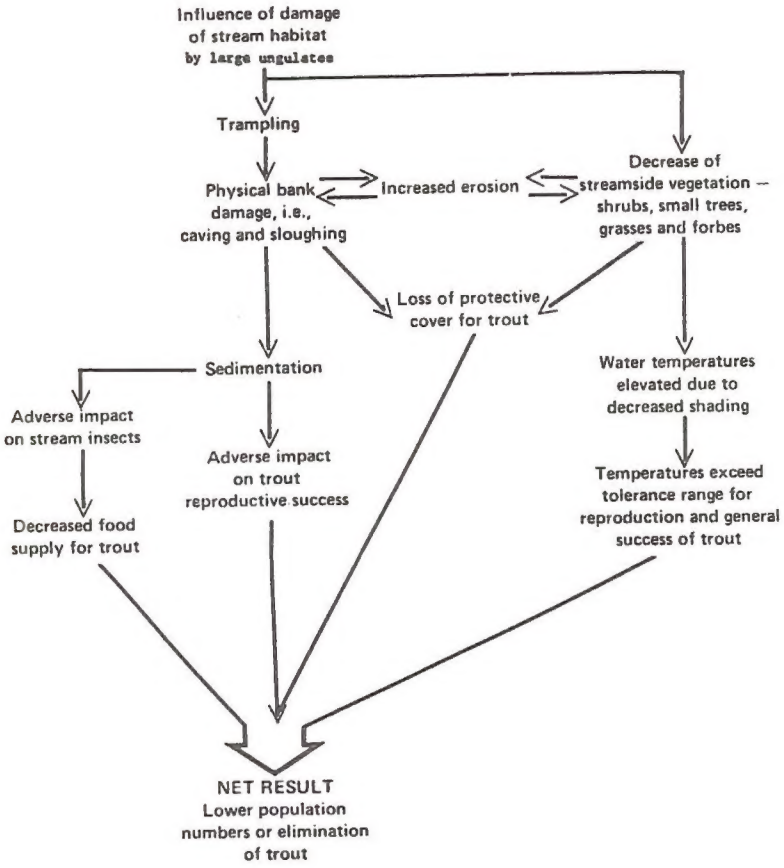
Figure 3-2 conceptualizes the unquantifiable adverse effects of large ungulates grazing have on salmonid stream habitat (Armour, 1977).

Herd Creek is the most important anadromous fish stream in the unit where grazing has significantly impacted rearing and/or spawning habitat for salmon and steelhead. The newly implemented rest-rotation grazing system presently installed in the Herd Creek Allotment and other grazing systems planned as part of the proposed action would probably not improve fish habitat significantly. Hormay (personal communication, 1976) stated that, "Vegetation in certain areas, such as meadows and drainage ways, are invariably closely utilized under any stocking rate or system of grazing. Such use may be detrimental to wildlife, esthetic or recreational or other values. Where this is the case, about the only way to preserve values is to fence the area off from grazing. Reducing livestock or adjusting the grazing season usually will not solve such a problem."

There is no published evidence to substantiate that once aquatic habitat in arid or semi-arid areas is degraded that rest-rotation systems contribute materially to improved conditions for fish. Earthen streambanks trampled by heavy ungulate use do not recover sufficiently during the rest cycle to improve fish habitat. Platts (1977) summarized a workshop pertaining to impacts of livestock on fish habitat that indicated deferred-rotation would not result in riparian-aquatic habitat conditions better than poor or fair.

FIGURE 3-2

CONCEPTUALIZED FLOW CHART OF ADVERSE EFFECTS OF STREAM HABITAT DAMAGE BY LARGE UNGULATES ON TROUT POPULATIONS
(Armour 1977)


Influence of damage of stream habitat by large ungulates
Trampling
Physical bank damage, i.e., caving and sloughing
Increased erosion
Decrease of streamside vegetation – shrubs, small trees, grasses and forbes
Loss of protective cover for trout
Sedimentation
Adverse impact on stream insects
Decreased food supply for trout
Adverse impact on trout reproductive success
Water temperatures elevated due to decreased shading
Temperatures exceed tolerance range for reproduction and general success of trout
NET RESULT
Lower population numbers or elimination of trout

Excluding livestock from damaged stream areas is a proven management technique to increase fish production. Successful streambank fencing projects have been documented in Nebraska (Van Velson, 1977), Oregon (Winegar, 1977), Utah (Duff, 1978), and elsewhere.

Livestock exclusion by fencing 2.0 miles of Lake Creek and 1.25 miles of Herd Creek should improve streambank conditions from "fair-good" to "good-excellent" by 1993. Beneficial effects of fencing include riparian vegetation recovery, stabilization of the streambanks and decreased siltation.

This should increase fish production in these streams by increasing the carrying capacity for resident and juvenile anadromous salmonids and improving water quality. Where livestock use of the streambanks is concentrated at water gaps and cattle crossings, habitat conditions on short stream sections would deteriorate due to loss of streambank vegetation and increases in stream siltation. These localized impacts are considered minor with no measurable decrease in fish production.

Spawning habitat within the fenced stream sections would improve as streambank stabilization and riparian vegetation recovery reduces stream siltation. However, fencing 1.25 miles of Herd Creek would not significantly increase spawning populations of anadromous fish. Upstream sources of silt attributable to natural erosion and heavy livestock use on Forest Service land would continue to degrade spawning habitat in the fenced Herd Creek section on BLM land.

Since Herd Lake acts as a sediment trap immediately above the proposed fencing project on Lake Creek, stream siltation would decrease dramatically in 2.0 miles of Lake Creek after livestock are excluded from the riparian area. Anadromous fish do not spawn in this stream section, but resident trout spawning habitat would improve significantly. Downstream salmon and steelhead spawning habitat in Herd Creek would indirectly benefit from fencing 2.0 miles of Lake Creek as stream siltation decreases and water quality improves.

As a result of the proposed action, erosion throughout the entire unit would decrease by 149,000 tons. Accompanying reductions in stream siltation will benefit fish production by improving spawning gravels and increasing the carrying capacity of streams for fish.

Geologic erosion and stream siltation accelerated by wild horse, livestock and wildlife grazing is especially critical in the Road Creek drainage. All but 0.8 miles of the fish producing streams in the Road Creek watershed are in "poor" condition due to lack of streamside vegetation, severe streambed siltation and

unstable streambanks. The Road Creek drainage contributes a significant sediment load to the East Fork River and ultimately to the main Salmon River, degrading these high quality spawning and rearing habitats for anadromous fish.

As a result of the proposed action (see soils section, Chapter 3), soil erosion rates in the Road Creek Basin would decrease due to decreases in wild horse and livestock use of riparian areas. Resultant decreases in stream siltation would improve resident fish habitat in Road Creek and would benefit downstream anadromous fish spawning habitat in the East Fork and main Salmon Rivers.

Proposed brush-beating projects would result in small increases in stream siltation for 1-2 years, with a long-term decrease in erosion following treatment. Road Creek, the Salmon River and the East Fork River would receive most of this increase in silt; however, no loss in fish production is anticipated.

Small scale burning projects proposed for portions of the East Fork Allotment would not detrimentally affect the aquatic resource. Short-term increases in stream siltation following burning would be insignificant.

Adjusting livestock stocking rates to the level of the proposed action may result in some ranchers going out of business. If private land went to summer home developments and residential development, the floodplain areas traditionally used as pasture would change to a more concentrated use. Adverse impacts associated with residential development and population increases along Challis Planning Unit streams include:

1. Increased fishing pressure on resident and anadromous salmonids.

2. Increased disruption of salmon spawning activity by larger numbers of residents along streams.

3. Overall water quality degradation due to residential water use.

4. Increased water demand from streams for residential use.

5. Possible development of put-and-take trout fishery for additional residents will increase competition with native fish.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 162 animals would change wild horse distribution patterns. There would be fewer bands of horses in the unit. It is impossible to predict if the horses would gravitate into a smaller total range within the unit or stay as widely disbursed as they are at the present time. Fewer wild horses on

the range would increase availability of quality/quantity forage for the remaining wild horses. This is most significant on the winter range where depth of snow cover sometimes severely limits availability of forage. This may increase the chance for survival of animals under unusually hard winters.

Protecting the Malm Gulch Allotment (9,136 acres) and Sand Hollow Watershed (3,905 acres) from wild horse grazing reduces the total wild horse range. Protection of these areas would probably not affect the animals when stocked at an average level of 162 head.

Installation of rest rotation on 75 percent of the wild horse range would present special problems to wild horses. The construction of an additional 41 miles of fence in the San Felipe, Warm Springs and Split Hoof Allotments increases the hazard for wild horses to become entangled while the fence is standing or laying down (Standard Operating Procedure 13). The magnitude of this is unmeasurable at this time. Entanglement in fences could cause serious damage or death to an animal. Fences would limit the free-roaming of wild horses and confine them during the season livestock graze the allotments. Horses confined and made to crop the forage closely may have extremely severe effects upon their habitat (Stoddart and Smith, 1955). Where winter grazing by livestock would occur in the Warm Springs Allotment (59,703 acres), fences would present a physical barrier during the cattle use period by restricting movement in the allotment. When heavy snow cover is present, horses may not be able to move to historic winter range.

Rest rotation and deferred rotation grazing systems with the accompanying water developments concentrate cattle use on the pastures grazed. Approximately 26,500 acres would become available for livestock grazing as a result of the new water developments. This would increase the competition of horses and cattle for available forage on approximately 75 percent of the wild horse area. Both cattle and horses primarily subsist on grasses. A study on diet similarities between wild horses and cattle was made by Dr. Richard Hansen of Colorado State University in the Challis wild horse area and the findings were as follows:

Cattle (grazing season long) Horse Spring	68.0%
Cattle (grazing season long) Horse Summer	65.3%
Cattle (grazing season long) Horse Fall	61.4%

Habitat overlap between wild horses, wildlife and cattle is keenest around water, in wet meadow areas and other overlap areas where animals tend to concentrate.

When pastures with wild horse winter range are grazed in the spring, summer and fall, forage for wild horses may be lacking in the winter. It is impossible to predict how intense this competition would be with the available data. The increased range made available to cattle by water developments would also increase the area of competition between wild horses and cattle. Areas where cattle and wild horses are in heavy competition would probably not show much if any improvement in vegetation condition within the time frame of the proposed action.

Of the 21,075 acres of brush beating identified in the proposed action, 17,630 acres would occur in the wild horse area; about 8,470 acres would occur on wild horse general winter range; 1,280 of the 8,470 acres would occur on critical winter range. Additional forage resulting from this treatment would be usable to cattle and wild horses. This additional forage would reduce increased competition for forage between wild horses and cattle on these treated areas.

Livestock Grazing

Implementation of the proposed action would significantly affect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of the proposed action season of use (Table 1-7) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, three would no longer be allowed fall grazing and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 3-14

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM PROPOSED ACTION, CHALLIS UNIT

Present Use		Proposed Action Level of Use		Change Resulting From Proposed Action	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	10,436	3,722	-7,008	-3,978

If the forage (7,008 AUMs) identified in Table 3-14 were replaced by hay, it would require 1,779 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users would be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of the proposed action because of the difference in capability of each operator to adjust their livestock operation. The change would probably be something less than the 3,978 cattle number in Table 3-14.

It is estimated that 20 percent of the livestock operators could adjust to a lower level of cattle use on the public land. These would be small operators that have taken partial non-use or total non-use in recent years.

If livestock operators reduced their herd size, they would graze fewer cattle on the National Forest and loose a permit for the cattle not grazed. If operators were forced out of business, they would loose their total Forest permit.

Table 3-15 identifies the level of livestock use proposed by allotment.

TABLE 3-15

LIVESTOCK USE LEVELS

AUMs

Allotment	Present Use (8-Year Average)	Proposed Use	Percent Change
Red Lake	1,062	613	-42
Herd Creek	1,188	1,411	+19
Road Creek	548	346	-37
Bruno Creek	127	85	-33
Round Valley	363	438	+21
San Felipe/ Peck Canyon	7,393	3,484	-53
Warm Springs	3,507	2,201	-37
Garden Creek	876	600	-32
Bald Mountain	614	296	-52
Thompson Creek	126	51	-60
Split Hoof	204	118	-42
Squaw Creek	444	133	-70
Spud Creek	240	202	-16
Pine Creek	179	181	+ 1
East Fork	492	192	-61
Sullivan Creek	81	85	+ 5
	17,444	10,436	-40

After 15 years under the proposed action there would be increased production of forage as a result of better management of the range. This would amount to 6,933 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use, an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, the 6,933 AUMs are considered for livestock use in the future.

Initial stocking rate	10,436 AUMs
Increased production after 15 years	6,933 AUMs
Total	17,369 AUMs

This total, within 85 AUMs of its present eight-year average use, could be available for livestock grazing in 15 years.

For an explanation of the methodology used in calculating future AUMs, see Appendix 2-F. Detailed calculations for each allotment are available at the Salmon, Idaho BLM District Office.

Socio-Economics

The direct economic impacts to the livestock operators and indirect impacts to the Custer County community may be classified into short-term impacts and long-term impacts. Short-term impacts are those impacts that would occur in the first 15 years under the proposed action. Long-term impacts would occur after 15 years, which is the life of the project. The change in each rancher's level of use on the public land as a result of the proposed action is displayed in Table 3-17.

Due to the lack of private land in Challis, there are two ranching strategies available to the operators in adjusting to the proposed action: purchase of hay and reduction in herd size. Under the first strategy ranchers would buy enough hay to counter the effects of the proposed action. Herd size would remain constant. The rancher's costs would go up by the amount of hay purchased and their net income would decrease by the same amount. The second strategy involves ranchers decreasing their herd size and reducing variable costs such as feed, livestock expenses, and grazing fees. Both income and costs would decrease.

Average cost and returns for small, intermediate and large ranch operations are identified in Tables 3-18, 3-19 and 3-20. The small operators would lose nine AUMs, on the average, from their current use on BLM land. This would increase their hay purchases by $180 and would bring their net loss to $738. If the small ranchers opt for reducing their herd size they would lose, on the average, five brood cows (9 AUMs for two months, which is the annual average season of use, means 4.5 cows). The rancher would lose $935 on his operation. Refer to Table 3-16 for a comparison of the two ranching strategies.

The proposed project would not have a very great impact on the small operators. Most of the small ranchers have off-ranch jobs that help provide income to maintain their life styles. Off-ranch income can be shifted to help pay for ranch expenses. The proposed action would make it harder for these ranchers to earn a profit, especially when the costs of production are rising faster than the prices they receive for their cattle.

The intermediate ranchers would lose 91 AUMs, on the average, from their current use on BLM land. This would increase their hay purchases by $1,820 and reduce their net income to $8,243. Were the intermediate ranchers to reduce their herd size, they would lose, on the average, 46 cows (91 AUMs for two months of grazing means 45.5 cows). The intermediate ranchers would lose approximately $2,000 on an annual basis from their present operations and their net income would be $4,200.

These ranchers would have a much harder time adjusting to the proposed action than the smaller ranchers. They have less off-

ranch income to defray ranch expenses and even under the proposed action these operations would probably require full time work. Many of these operations would become marginal and depend on higher cattle prices and stable production costs for profitability.

The large operators would lose 1,064 AUMs, on the average, from their current use. Purchases of hay would increase feed costs for these operators by $21,280. This would more than double their net loss to $38,237. If these ranchers decide to reduce their herd size they would lose approximately 532 head of cattle (1,064 AUMs for two months of grazing means 532 head). They would lose more than $50,000, on the average, from their present situation and would suffer a net loss of $47,578. Livestock income as a result of the proposed action is listed by ranch size in Table 3-16.

The five large ranch operators would probably have to sell their ranches to either a commercial livestock company or to recreation developers looking for second homesites. In addition, the ranchers along the East Fork would be under intense pressure to subdivide their property. A minimum of five and a maximum of 13 ranchers, therefore, would have to make some tough decisions regarding their futures in ranching.

The five large ranch operators would be pressured to radically alter their ranch management. They would either have to purchase smaller ranches to make up the AUMs lost due to the proposed action or they would have to sell out. It seems unlikely that the large operators would be willing to operate with a net loss of between -$38,237 to -$47,578 for very long. In addition, the ranchers along the East Fork would be under pressure to subdivide their property. In the spring of 1978 one rancher sold his 440-acre ranch to a vacation home developer. The seven remaining operators, due to the proposed action and demand for vacation property, would most likely leave the cattle business. The East Fork ranchers would have reduced incomes due to the proposed action while owning land that could be sold for $2,000 per acre (price as of May 1978).

The small and large ranch operators would have a net loss. This would mean those ranchers would have to either utilize savings or reduce assets to provide money for ranch operations.

TABLE 3-16

LIVESTOCK INCOME IN THE CHALLIS
PLANNING UNIT UNDER THE PROPOSED ACTION

Classification	Mean No. of AUMs (8 Year Average)	Mean AUM Loss From 8 Year Average Use	Percentage Loss From 8 Yr Average	Net Income or Loss From Purchase of Hay	Net Income or Loss From Herd Reduction
Small	58	9	16%	$- 738	$- 935
Intermediate	234	91	39%	$ 8,243	$ 4,200
Large	2,509	1,064	42%	$- 38,237	$- 47,578

Source: BLM Idaho State Office, 1978

Only the intermediate ranchers would earn a profit, the other operators' income would be essentially zero. Reductions in livestock income would not only result in reduced livestock employment but also in secondary impacts in the local economy. A reduction of $120,000 in livestock income would result in a loss of 14 ranch jobs and loss of an additional $35,000 of income, distributed among the livestock, agriculture and trade sectors. There would be a potential for an additional loss of three jobs in the county. (These impacts have been calculated by DYRAM, a computer model developed by the Bureau in 1978. An explanation of DYRAM may be found in Appendix 6-A.)

The demand for recreation property in Custer County coupled with adverse impacts to livestock income may pressure livestock operators along the East Fork of the Salmon River to sell their properties to developers. One rancher has already done this during the spring of 1978 and seven more have been made offers. This could result in the loss of 16 to 24 full time residents and in an increase of several hundred summer residents. This may create some impacts on law enforcement, sewage and transportation services in Custer Country. However, it is believed that the growth in the number of summer residences may increase the tax base of the county in sufficient amounts to pay for the needed service. Hoever, development patterns are unknown at this time. The most detrimental impact would affect the bighorn sheep (refer to the impacts on bighorn sheep in the Wildlife Section).

Long-term impacts are hard to predict because of fluctuating cattle prices, production costs, and business conditions. With an improved range in 15 years, business conditions may be such that ranch income may or may not increase. With 1977 prices and costs held stable, an improved range means available AUMs which in turn would mean more money for the livestock operators.

In 15 years under the proposed action, net ranch income in the Challis Unit would be approximately $192,847 (based on 1977 costs; and returns and in 1977 dollars: see Appendix 6A).

Public Values and Attitudes.

While respondents found it difficult to describe how operators scheduled for severe grazing cuts would manage to stay in busines, implicit in all the interviews was a strong motivation for carrying on if at all possible.

Reduction in herd size was mentioned by three respondents as the only possible response to grazing cuts, and one said it would be difficult to carry on at all with herds below about 250 head. Two respondents predicted most ranchers would hang on in business on the grounds they were tough and had survived worse problems in the past. Three people said operators who were out of debt had the best chance of staying in business.

TABLE 3-17

ECONOMIC IMPACTS OF THE PROPOSED ACTION
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	CHANGE FROM ACTIVE	PERCENTAGE LOSS	CHANGE FROM AVERAGE	PERCENTAGE LOSS	PERCENTAGE DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	111	179	-61.72	172	-60.78	8.05
Baker, Richard	213	209	81	132	-61.97	128	-61.24	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.07
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	94	78	-45.35	25	-21.01	25.50
Carlisle, Lewis	539	223	163	376	-69.76	65	-28.51	35.88
Chivers, Garth	278	16	135	143	-51.44	119 a/	100.00	15.42
Cominotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	7 a/	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,436	2,106	-38.00	1,085	-24.00	24.83
Jan Mar Corp.	904	335	297	607	-67.15	88	-22.86	30.11
Keppner, Kay	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	51 a/	100.00	12.47
Leuzinger, George	65	41	36	29	-44.62	5	-12.20	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	108	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	22 a/	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	40	10	-20.00	15 a/	60.00	13.80
San Felipe Ranch	8,375	7,396	3,484	4,891	-58.40	3,912	-52.89	23.26
Sherwood, Archie	55	45	42	13	-23.64	3	-6.67	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.69
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	3 a/	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	102 a/	100.00	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	257	295	-53.44	172	-40.09	25.27
Yates, Ralph	473	467	295	178	-37.63	172	-36.83	15.33
Totals	21,900	17,447	10,436	11,464		7,011		

a/ Gain from average use
Source: BLM, Idaho State Office, 1978

TABLE 3-18

AVERAGE COSTS AND RETURNS FOR THREE SMALL CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (REDUCTION IN HERD SIZE UNDER THE PROPOSED ACTION)

	Average Per Ranch
Returns	
Sale of Calves	$ 4,853*
Sale of Yearlings	--
Sale of Cull Cows and Bulls	2,389*
Other Receipts	825
Gross Returns	$ 8,067*
Expenses	
Land Rent	$ 500
Feed	1,371*
Livestock Expenses	138*
Livestock Purchased	567
Insurance	250
Labor Expense	--
Taxes	662
Seed & Fertilizer	349*
Machinery Operating Expenses	850
Repairs	433
Utilities	623
Federal Grazing Fees	538*
Association Fees	--
Supplies	214*
Misc. Expenses	413*
Interest Expenses	2,828
Total Cash Expenses	$ 9,736*
Net Ranch Cash Income (Gross returns minus cash expenses)	$ (1,669)*
Change in Inventory	734
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	$ (935)*

*Adjusted for reduced herd size

( ) Means loss

TABLE 3-19

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (REDUCTION IN HERD SIZE UNDER THE PROPOSED ACTION)

	Average Per Ranch
Returns	
Sale of Calves	$ 13,537*
Sale of Yearlings	9,083*
Sale of Cull Cows and Bulls	4,726*
Other Receipts	--
Gross Returns	$ 27,346*
Expenses	
Land Rent	$ 166
Feed	2,765*
Livestock Expenses	489*
Livestock Purchased	10,554
Insurance	1,098
Labor Expense	1,068
Taxes	1,017
Seed & Fertilizer	1,440*
Machinery Operating Expenses	3,311
Repairs	1,892
Utilities	1,046
Federal Grazing Fees	1,175*
Association Fees	48
Supplies	159*
Misc. Expenses	393*
Interest Expenses	4,274
Total Cash Expenses	$ 30,895*
Net Ranch Cash Income (Gross returns minus cash expenses)	$ (3,549)*
Change in Inventory	7,743
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	$ 4,194*

*Adjusted for reduced herd size

( ) Means loss

TABLE 3-20

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT (REDUCTION IN HERD SIZE UNDER THE PROPOSED ACTION)

	Average Per Ranch
Returns	
Sale of Calves	$ 95,718*
Sale of Yearlings	16,069*
Sale of Cull Cows and Bulls	22,784*
Other Receipts	10,394
Gross Returns	$144,965*
Expenses	
Land Rent	$ 4,667
Feed	2,753*
Livestock Expenses	3,764*
Livestock Purchased	38,316
Insurance	11,955
Labor Expense	26,669*
Taxes	12,770
Seed & Fertilizer	4,928*
Machinery Operating Expenses	13,014
Repairs	18,887
Utilities	12,708
Federal Grazing Fees	7,911*
Association Fees	292
Supplies	2,119*
Misc. Expenses	7,479*
Interest Expenses	47,332
Total Cash Expenses	$215,564*
Net Ranch Cash Income (Gross returns minus cash expenses)	$(70,599)*
Change in Inventory	22,981
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	$(47,578)*

*Adjusted for reduced herd size

( ) Means loss

Two-thirds of the respondents mentioned land sales to subdivisions as a means of economic survival following BLM grazing cuts, but all added this would be done with the greatest reluctance. The implication was that selling out was viewed as the most economically feasible but nevertheless least desirable option available to operators suffering severe cuts in grazing privileges, particularly in the East Fork area. Reasons given for resisting the subdivision solution were: 1) Subdivision would harm wildlife. (Four respondents.) Some mentioned the most desirable land for subdivision is also the most sensitive wildlife habitat. 2) A lot of outsiders moving into the area would be undesirable. (Six respondents.) Eight respondents remarked they and their neighbors disliked congested urban settings and wanted Custer County to stay as it is . One said he preferred the "rural honest, people-centered lifestyle" of the area to remain unchanged. One referred to a population increase of 700 in "six or severn years" as "a vast influx of people." One respondent who had sold several acres for residential development said he regretted it: "Financially it's o.k., but I don't like the atmosphere with city people for neighbors. They think they can snap their fingers and have the city way of life but they don't contribute to the community." Half of those interviewed indicated they would welcome newcomers who "fit into the community" and contribute to community life. Several mentioned hospitality and neighborliness as local qualities they were proud of.

If the demand for residential sites in the area is as strong and persistent as most respondents believe, it seems likely permittees in financial difficulty would gradually sell off bits and pieces of their property to cover the costs of maintaining their way of life (rather than the economic viability of their livestock business). Given the tone of the interviews it seems less likely that many, if any, ranchers would sell out and move away as a direct result of the proposed action.

Were the proposed action to accelerate land sales to subdivision developers, the population of Custer County could increase even more rapidly than in the recent past (see section on population). This would tend to benefit those businesses catering to the general public, and would improve the county's difficult tax situation. Since the trend so far has been for newcomers to be retired, while the youth of the area have been largely forced to seek elsewhere for employment, the mean age of the Custer County population would be likely to increase over time. The

existing trend toward a loss of students from the school system would probably accelerate due to the loss of young families who cannot make a living in the area. Because wxisting facilities and and transporation services would probably have to be maintained, the cost per capita of educating the county's children would probably increase. With an increase in the elderly population, the pressure on medical services would tend to increase, although the lack of a hospital in the county could inhibit the immigration of persons whose health is precarious.

New residents coming from urban settings may expect more services provided by government than are available in Custer County, where many kinds of help are traditionally provided by neighbors rather than city, county, or state officials. A rapid influx of new residents could preclude their gradual absorption into the neighborly way of life, which would probably occur with slow or small-scale increase in population. Changes in the character of the community could include losses in community cohension, the ability to rely on well-known neighbors, and some traditional forms of cooperation and comradeship such as the volunteer fire department. Such losses, occurring gradually, are difficult to measure in quantitative terms and may be difficult for even those affected to articulate, but they would probably be felt by long-term residents of the area. Changes which would be noticeable to old-timers would probably not be apparent to newcomers, who would see the community as closer-knit and more neighborly than urban society.

Another unquantifiable impact of the proposed action is its contribution to an existing, and apparently intensifying, alienation and distrust of government.

The allocation of forage to wild horses in the proposed action, resulting in reductions in allocations for livestock, was criticized by seven respondents. None expressed approval of BLM's wild horse policy. One respondent said, "It's almost as if wild horses are more important than people, "while another asserted, "We're just as important as wild horses."

Proposed reductions in BLM grazing privileges are seen as yet another instance of insensitive decisionmaking by distant authorities who lack knowledge and understanding of local conditions and who fail to take into account the efforts of local citizens to explain them. A third of those interviewed expressed a conviction that BLM district officials lacked the authority to make decisions

concerning them, and half asserted public participation mechanisms were employed only to meet regulations while their testimony went unheeded by decisionmakers. As one respondent put it, "We're knowledgeable whether the government thinks so or not." Four of those interviewed cited an inability to trust the word of governmental officials. In a community where honesty and integrity seem to be one of the highest virtues, the breach of faith perceived by these respondents can be viewed as a sign of profound disaffection from government. This disaffection results from the proposed action seen in the context of other government actions disfavored by local citizens. Some such actions include EPA constraints on mining, Forest Service restrictions on grazing and timber cutting, U.S. Army Corps of Engineers' regulations on streambank maintenance, and OSHA's unpredictable inspections. Together, these were defined by three respondents as government "harassment."

The perception that local control over the community's future is precluded by federal government actions is very strong among respondents and indicates a resentment which is likely to persist as Custer County continues to develop as a recreation, retirement, and wilderness area in the context of continuing restrictions on use of public lands.

The overall impression conveyed by the interviews was that respondents had not had sufficient time since announcement of BLM's plans to explore the available options and assess their relative desirability and feasibility. Based on the information available, no firm predictions of the reaction of permittees to the proposed action can be made in this Supplement, although respondents' comments suggest the motivation to remain in the area and maintain their lifestyle is very strong among ranchers in the area.

This analysis concentrates on the perceptions of a small sample of local people and does not include the views of non-local groups with an interest in the resources to be managed under the proposed action. It should be noted that trends and actions seen as undesirable by long-time residents of the area may be viewed as progress by other interested groups. Lack of specific information on such groups prevents a more extensive discussion of their points of view.

Water Use. Total consumptive water requirements by livestock and the major wildlife species and wild horses in the unit is estimated to be 1,745,400 gallons per year under the proposed action. Consumptive water requirements by individual species are shown on Table 3-21. This is a decrease of 52 percent of the water currently consumed. Livestock consume an estimated 3,]30,800 gallons of water per year or a decrease of 40 percent of the current year's use. A decrease of 3,984,825 gallons of the annual water consumed by the major ungulates would have no significant impacts on total water, since this would only be a very small fraction of the total annual water yield.

TABLE 3-21

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK,
WILD HORSES AND WILDLIFE UNDER THE PROPOSED ACTION

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Livestock	]0,436 c/	300 f/	3,]30,800
Wild Horses	],944 d/	360 f/	699,840
Deer a/	38,846 e/	]5 g,h/	582,690
Antelope	3,926 e/	30 i/	]]7,780
Elk	],683 e/	]50 f/	252,450
Bighorn Sheep	],544 e/	60 j,k/	92,640
			4,876,200 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 1-2
d/ Wild Horse Section, Chapter 3
e/ Table 1-6
f/ Stoddart and Smith (1955)
g/ Dasmann (1971)
h/ Nichol (1938)
i/ Taylor (1975)
j/ Crow (1964)
k/ Groves (1961)

The Garden Creek drainage would continue to furnish an ample supply of water to meet all needs, both present and future, of the Challis municipal water system.

Streamflow. The proposed action would not significantly alter the total annual water yield from public land. Therefore, maximum and minimum streamflows for the Salmon River would not be expected to change. Some smaller streams, however, would experience an increased flow because of less consumption by large ungulates. This would only occur on those small streams adjacent to areas of heavy animal concentration and may only be for a short duration. The groundwater in the unit would be unaffected by this action.

Water Quality. The concentration of the various chemicals which determine water quality in base flows of a stream is dependent on geologic material through and over which it flows and the length of time it is in contact with soluble salts. Because of this, livestock grazing would not have much influence on the concentration of dissolved solids. Under the proposed action the level of dissolved solids would usually meet the specific parameters established by the Environmental Protection Agency.

However, streambank disturbance or rising water levels due to an overland flow event generally result in a high suspended sediment concentration. Grazing animals concentrate along streams, wet meadows, and valley bottoms, heavily utilizing vegetation. This results in streambank sloughing and sediment influx into the stream. This concentrated use made on the riparian zone reduces its effectiveness as a filter field in screening overland sediment from entering the water.

The types of impacts resulting from this action are easily discernible. However, the magnitude or intensity of each impact is not so readily recognized. Presently, there are no scientific studies or research to aid in establishing guidelines in determining the magnitude of each impact. It is relatively simple to determine whether conditions will deteriorate or be enhanced, but nearly impossible to quantify the impact, e.g., we can be fairly certain that if we reduce the number of cattle adjacent to a live stream from 100 head to 25 head, there will be a corresponding decrease in the concentrations of suspended sediment and fecal coliform bacteria. However, we can only determine the concentration of these and other introduced material after the livestock numbers are decreased and the water has been analyzed by scientific methods.

Six allotments (Table 1-6) are scheduled to have rest-rotation grazing systems. These allotments would each have a pasture rested for one year. Streams flowing through those pastures will have a reduced amount of suspended sediment during the rest year. However, when that pasture is grazed, suspended sediment concentrations are expected to return to current levels.

In those allotments not scheduled for rest-rotation systems, livestock would, sometime during the year, graze in all pastures. Suspended sediment levels in streams flowing through these allotments would not be expected to change.

The estimated sediment yields by allotment are listed on Table 3-9. The projected estimated sediment yield for the unit is 288,000 tons of soil annually or a reduction of 149,000 tons from the current annual rare. The total suspended sediment in the Salmon River would be expected to decrease.

Suspended sediment is presently deposited downstream, forming new gravel bars and altering the stream channel. The change in the river flow tends to increase bank cutting and the loss of sometimes valuable farmland. The proposed action would reduce the amount of suspended sediment and possibly the amount of bank cutting.

Currently, water is diverted from the Salmon River for irrigation purposes. This water, heavy with silt, adversely affects desirable soil characteristics, i.e., those controlling infiltration, runoff, the moisture storage capacity. This tends to reduce productivity of the irrigated land. The proposed action would reduce the amount of sediment in the Salmon River.

The Challis municipal water supply treatment plant presently removes suspended sediment from Garden Creek before it enters the system. The proposed action would reduce the amount of sediment in Garden Creek.

A reduction in livestock numbers in those allotments scheduled for rest-rotation grazing systems (Table 1-6) would mean a corresponding decrease in the fecal coliform level found in the adjacent streams. Since all rest-rotation systems have pastures not used in alternate years, streams flowing through those pastures would contain no fecal coliform bacteria from livestock. When that pasture is grazed, however, the coliform bacteria levels would be expected to rise.

In those allotments not scheduled for rest-rotation systems, livestock would, at one time or another, use all pastures within the allotment. Fecal coliform bacteria levels would not be expected to change from current levels under the proposed action.

If ranchers go out of business as a result of the proposed action's implementation and sell out to recreational home developers, overall water quality in streams where this occurred would probably be degraded.

Recreation Resources

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days. Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase; however, there is no data to predict what the increase would be. There would be fewer wild horses to view in the unit but sufficient numbers left if recreationists wished to view them.

If ranchers sell their private land to land developers and the land is subdivided into summer home property, there would be an increase of recreation use in the area. There is no data to quantify this impact.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from the proposed action would cause a slower rate of change to most of the cultural resource than is occurring under present conditions.

Wilderness

Although the potential for establishing wilderness areas in the ES area is not presently known, impacts listed here would result if the proposed action was implemented in an area with wilderness potential. Such impacts to potential wilderness would result from the construction of fences, access roads, and water developments. Impacts would be in the form of scars on the landscape due to construction activities. Visual impacts would result from the appearance of man-made features that would change the wilderness character of the area. These impacts would occur in the short term, but would be of long-term duration. However, if any area within the ES area is identified as having wilderness potential and is formally identified as a wilderness study area, implementation of any part of the proposed action in that area which would change its wilderness character would be deferred. If such an area was established as a wilderness area, the deferment would be permanent; if not, the proposed action would ultimately be completely implemented.

Chapter 4
Mitigation

All mitigation proposed is described in Chapter 1 as part of the proposed action.

Chapter 5

Unavoidable Adverse Impacts

VEGETATION

Unavoidable adverse impacts would continue to vegetation due to spring or season-long use in allotments not proposed for grazing systems (Red Lake, Road Creek, Bruno Creek, Round Valley, Split Hoof, Pine Creek and Sullivan Creek). Livestock use would continue to adversely impact riparian and wet land habitat, but to a lesser degree than at present.

WILDLIFE

Terrestrial

All the allotments except Herd Creek have May turnout dates. This early turnout causes interactions during a crucial time for the majority of wildlife species leading to stress, displacement and increased deaths on wildlife populations. The same impacts would occur around watering areas where livestock and horses habitually congregate for water.

Fences could cause mortality to big game species. If livestock operators are forced to sell their land to land developers, the additional human harassment on big game species could cause displacement, mortality and decreased birth rates. The most significant impact would probably occur to the bighorn sheep.

Aquatic

Continued livestock use will adversely impact riparian and wetland.

If livestock operators are forced out of business, the following impacts would occur to anadromous fish:

1. Increased fishing pressure on resident and anadromous salmonids.

2. Increased disruption of salmon spawning activity by larger numbers of residents along streams.

3. Possible development of put-and-take trout fishery for additional residents will increase competition with native fish.

WILD HORSES

Wild horse numbers would be reduced from 586 animals to 162 animals. Competition for forage would increase on use pastures under rest rotation and deferred rotation grazing systems. The magnitude of this adverse impact cannot be predicted. Fences could cause injury or death to wild horses.

LIVESTOCK GRAZING

There would be a change in the level of livestock grazing use in the Challis Unit.

Present Use	-	17,444 AUMs
Proposed Use	-	10,436 AUMs

This would mean a reduction of 7,008 AUMs of primarily spring grazing until additional forage is produced from the better grazing management established in the unit. This could mean either ranchers replacing this grazing use with 1,779 tons of hay annually or reduce their herds (worse case situation, 3,978 cattle).

SOCIO-ECONOMICS

Total income loss in the Challis Unit as a result of the proposed action is $120,000. This would occur annually until additional forage is available from the better grazing management established in the unit.

Public Values and Attitudes

Ranching families do not want to change their life style. The possibility of having to sell their ranch property is distasteful. Community and county leaders expressed views in harmony with the livestock operators. Alienation and distrust of federal government would intensify.

WATER RESOURCES

If ranchers sold out to land developers, the following impacts would occur:

1. Overall water quality degradation due to residential water use.

2. Increased water demand from streams for residential use.

RECREATION RESOURCES

There would be fewer wild horses to view within the unit.

If ranchers sold their property to land developers, there would be an increase in recreation activities in the area.

CULTURAL RESOURCES

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Chapter 6

Relationship Between Local Short-Term Uses of Man's Environment and Maintenance and Enhancement of Long-Term Productivity

SOIL AND VEGETATION

Construction of the proposed range improvements would cause a loss of 76 acres from vegetation production. Vegetation manipulation on 23,385 acres would result in disturbance of vegetation and soil during the treatment and a short time after but would result in increased vegetation density and production (1,000 AUMs increase). Better management of the vegetation resource would increase forage production by 6,933 AUMs over the short term or the life of the proposal. Forage production would continue to increase in production toward the potential of each site to produce vegetation over the long term.

The increase in vegetation cover over the short term would cause a reduction of 149,000 tons of soil loss through erosion. Improvement would continue through the long term but not necessarily at the same rate as improvement during the life of the proposal.

There would be 26,851 fewer acres in poor condition, 27,594 fewer acres in fair condition and 54,445 more acres in good condition resulting from the proposed action over the short term. This upward trend in condition would continue into the long term.

WILDLIFE

Terrestrial

The proposed action would allocate 7,770 AUMs to big game. This represents an increase from the present situation and would be sufficient forage to meet Idaho Fish and Game Department big game population objectives. Those objectives are 5,624 mule deer, 317 elk, 1,160 antelope and 220 bighorn sheep.

Riparian areas would continue to be overused by livestock. Nongame wildlife populations would remain below that which would result from decreased or eliminated livestock use. Sage grouse populations in riparian areas would be similarly limited.

Meadow areas would be slightly improved and increases in sage grouse and nongame animals should result.

Fences would benefit nongame populations. However, the proposed fences could be a severe risk to pronghorn populations during severe snowstorms if the fences were not let down as planned.

Water developments would produce beneficial impacts to wildlife.

Aquatic

Aquatic habitat would improve in the short term. Anadromous fish and resident fish populations would increase slightly as a result of the proposed action. These impacts would continue in the long term.

WILD HORSES

Some wild horses could be expected to be injured or killed in the short term during attempts to cross fences proposed for the ES area. Furthermore, the wild and free roaming nature of wild horses would be inhibited somewhat in the short term. Inbreeding could result because of increased confinement. These impacts would occur in the short term and would continue in the long term.

LIVESTOCK GRAZING

The proposed action would cause continued impacts from livestock operations through the short term. These impacts would be in the form of trampling around water sources. Minor impacts would occur to cultural resources into the long term.

The initial impacts from the proposed action would be a reduction in licensed AUMs on public lands of 40 percent. The short-term impact would be an increase in forage production of 6,933 AUMs. Allocation to grazing ungulates would be made at the time these increases would be significant in quantity. These allocations would be made by updating the BLM planning system for the Challis Unit. Increases in forage production would continue in the long term until the potential of each site is reached.

SOCIO-ECONOMICS

The proposed action would initially cause a decrease in income from livestock grazing. This would approximate $120,000 annually. Over the short term, increased forage production could reverse this loss if the additional forage production was allocated to livestock.

Long-term impacts should be increases in income from livestock grazing in the Challis Unit.

Reduction of income to ranchers would adversely effect quality of life in the Challis area. Long-term impacts would have beneficial effects on the quality of life in the area.

In summary, the short-term trade offs associated with the proposed action are minimal except for the effects on livestock grazing and impacts to cattle ranchers' income. These are significant and would have an adverse effect to the quality of life in Custer County.

Long-term trade-offs should also be minimal except that significant increases should accrue to income from livestock grazing resulting from increases in forage production. Quality of life in Custer County should also benefit from this increase in income.

WATER RESOURCES

Water consumption by livestock would be reduced from the proposed action but should increase in the long term. Storm runoff would be decreased and surface water quality would generally increase in the short term and carry into the long term.

Chapter 7

Irreversible and Irretrievable Commitments of Resources

Human resources used in implementing this proposal are considered to be irreversible and irretrievable. Monies, fuel, and materials used to develop the proposal are considered to be irretrievable.

Archeological and other historical, scenic, or cultural values which may be inadvertently destroyed as a result of proposed actions are also considered to be irretrievable. Development of the soil resource has occurred over hundreds of years. Soils eroded as a result of the proposed action are considered to be irretrievable. Except as noted above all other resources involved in this proposal are retrievable and/or reversible. Those include such resources as livestock, wildlife, vegetation, and wild horses.

VEGETATION

Construction of improvements and vegetation treatments would remove approximately 11 acres from current production for the life of the improvements/treatment. This is considered to be an irretrievable but not irreversible commitment.

SOIL

Top soil that is displaced by erosion as a direct result of the proposed action is irretrievable. However, sediment yields with the proposed action are estimated to be reduced about 150,000 tons annually.

WILDLIFE

Wildlife populations are considered to be renewable resources and are retrievable, providing their habitat is not converted to other uses and soil resources are preserved.

SOCIO-ECONOMIC CONDITIONS

Land may be diverted from agricultural production to residential use (summer and full time). This would be considered irretrievable commitment of this land.

CULTURAL RESOURCES

Proposed livestock grazing and development of facilities could disturb certain cultural resources. Once disturbed, historical and archaeological sites as well as artifacts are no longer available for future study. This can result in a data gap in the history of an area and would be considered an irretrievable commitment.

LOSS OF POWER AND MATERIALS USED IN DEVELOPMENT

Fuel and materials consumed in support of the proposed action would be expended over the project life and are considered to be an irretrievable commitment.

Chapter 8

Alternatives to the Proposed Action

INTRODUCTION

Six alternatives are addressed in this chapter. They are: (1) Continuation of present management (no action); (2) Elimination of livestock and wild horse grazing; (3) Minimum constraints on livestock grazing; (4) Minimum constraints on wildlife; (5) Minimum constraints on wild horses; and (6) Reduced levels of grazing by large ungulates. Table 8-1 shows the levels of use for each alternative.

TABLE 8-1

SUMMARY OF ALTERNATIVE USE LEVELS

Alternative	Use Levels (AUMs) Livestock	Wild Horses	Wildlife (Big Game)	
Continuation Present Management	17,444	8,790	595	a/
Elimination of Livestock and Wild Horses	0	0	7,772/0	b/
Minimum Constraints Livestock	12,456	1,381	6,332/0	b/
Minimum Constraints Wildlife	9,202	2,115	7,772	b/
Minimum Constraints Wild Horses	10,100	5,100	7,772	b/
Reduced Levels of Grazing	7,158	1,200	7,772	b/

a/ AUMs reserved for wildlife in the 1945-1960 adjudication procedures. This forage was not allocated to any specific allotment, wildlife species or season.

b/ Non-competitive/competitive AUMs.

The proposed grazing systems identified for the various alternatives are the same as in the proposed action and are described in Chapter 1. Construction methods, standards and standard operating procedures for the range improvements and vegetative manipulation are the same as described in Chapter 1. Other resource management functions would continue to operate within the Challis area according to approved District programs. With the exception of the elimination of grazing by livestock and wild horse alternative, the Herd Creek AMP would be continued as described in Chapter 1 for the proposed action.

None of the present broad vegetation types are expected to be converted to a completely different type as a result of any of the alternatives (with the exception of those alternatives that propose vegetation manipulation projects). The only change that will occur within a broad vegetation type will be a change in condition class.

These changes in condition class will result in corresponding changes in the structural composition of the type insofar as the grass, forb and shrub composition is concerned. Table 2-5 illustrates the structural makeup of each vegetation type in different condition classes.

Only the significant impacts for each resource value affected by each alternative are analyzed. Where the impacts are the same as would occur under the proposed action, these impacts are referenced and are not repeated again in this chapter. The analysis of impacts for each alternative is based on the same long-term time frame (15 years) as the proposed action. A summary table listing the impacts for the proposed action and each alternative, is located at the end of this chapter.

CONTINUATION OF PRESENT MANAGEMENT (NO ACTION) (ALTERNATIVE 1)

Description

This alternative, for purposes of analysis, assumes that licensed use is at the level of the eight-year average, with present allotment boundaries and class of livestock (see Table 8-2). No new range improvements or vegetation manipulation would be implemented; however, existing range improvements would continue to be maintained in a useable condition.

The wild horse numbers would be controlled to maintain an average of 586 horses, the estimated number now occurring in the area. Excess numbers would be gathered approximately every year. The AUMs and location of the horse herd by allotment is shown in Table 8-2.

Since the number of wildlife are not under the control of BLM, it is expected they will fluctuate according to population dynamics and habitat condition. For analysis purposes, the present numbers and locations will be utilized as shown in Table 8-2.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the continuance of present management practices. The 1977 soils/vegetation inventory indicates that there is a significant amount of vegetation in poor ecological condition and in a downward trend. Interpretation of the inventory data also indicates that an overall 40 percent downward adjustment in livestock grazing is needed in order to stock the grazing units at proper carrying capacities. Therefore, the impacts shown in Tables 8-3, 8-4, and 8-5 would be the result of the continuance of early spring turnout dates with no provisions for spring rest or deferral of spring use and an overall over obligation of the forage caused by excessive stocking rates. All projections are made based on conditions as they would occur after 15 years under present management.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	36,200	+ 7
Fair	145,440	117,381	-19
Poor	103,567	129,241	+25
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend In Condition	Present Acres	Future Acres
Up	12,790	12,790
Down	72,977	72,977
Static	197,055	197,055
Rock, Douglas-Fir, Burned Areas	47,300	47,300
Total	330,122	330,122

TABLE 8-2

NO ACTION ALTERNATIVE

Allotment	Livestock Present Use 8-Year Average Numbers	Season of Use	AUMs	Wild Horses Numbers	Season of Use	AUMs
Red Lake	785	5/1 to 6/30	1,062	53	Yearlong	795
Herd Creek*	666	6/16 to 10/10	1,188			
Road Creek	322	5/1 to 6/30	548	64	Yearlong	960
Bruno Creek	35	5/16 to 9/30	127			
Round Valley	395	5/1 to 6/30	363			
San Felipe/ Peck Canyon	1,500	5/1 to 9/29	7,393	129	Yearlong	1,935
Warm Springs	1,250	5/1 to 12/15	3,507	275	Yearlong	4,125
Garden Creek	878	5/1 to 6/30	876			
Bald Mountain	501	5/1 to 6/30	614			
Thompson Creek	34	5/16 to 10/15	126			
Split Hoof	195	5/1 to 6/30	204	41	Yearlong	615
Squaw Creek	322	5/1 to 6/30	444			
Spud Creek	182	5/1 to 6/30	240			
Pine Creek	132	5/16 to 6/10 10/1 to 10/16	179			
East Fork	440	5/1 to 6/30	492			
Sullivan Creek	63	5/1 to 6/30	81			
Malm Gulch	0	None	0	24	Yearlong	360
Total	7,700		17,444	586		8,790

* Herd Creek Implemented AMP Rest-Rotation Three Pasture

Wildlife

Allotment	Elk Numbers	Season of Use	AUMs	Deer Numbers	Season of Use	AUMs	Antelope Numbers W/SSF	Season of Use	AUMs	Big Horn Sheep Numbers	Season of Use	AUMs
Red Lake				400	W/SP	441	50/30	W/SP/SU/F	31			
Herd Creek	20	W/SP	38	500	W/SP	552	0/10	SP/SU/F	5			
Road Creek	2	W/SP	4	425	W/SP	469	0/55	SP/SU/F	26	18	W/SP	18
Bruno Creek	8	W/SP	16	100	W/SP	45						
Round Valley				50	W/SP	55	115/40	W/SP/SU/F	58			
San Felipe/ Peck Canyon	140	W/SP	271	150W/37S	W/SP/SU	209	425/223	W/SP/SU/F	248			
Warm Springs				175	W/SP	193	160/190	W/SP/SU/F	144			
Garden Creek	40	W/SP	25	875	W/SP	965	20/20	W/SP/SU/F	18	23	W/SP	24
Bald Mountain	5	W/SP	10	800	W/SP	882						
Thompson Creek	19	W/SP	37	200	W/SP	221						
Split Hoof				200	W/SP	221	0/30	SP/SU/F	14			
Squaw Creek	18	W/SP	35	400	W/SP	424						
Spud Creek	5	W/SP	10	290	W/SP	319	140/15	W/SP/SU/F	54	6	W/SP	6
Pine Creek				200	W/SP	221						
East Fork	5	W/SP	10	300	W/SP	330				40	W/SP	42
Sullivan Creek	5	W/SP	10	150	W/SP	165						
Malm Gulch	0		0	0		0						
Total	267		466	5,252		5,712	910/613		598	87		90

Note - All AUM figures are present big game forage demand. The needed demand is not allocated in this alternative.

TABLE 8-3

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE NO ACTION ALTERNATIVE

Allotment	Initial AUMs Under This Alternative	Future AUMs Available For Livestock
Red Lake	1,062	599
Herd Creek	1,188	1,411
Road Creek	548	217
Bruno Creek	127	55
Round Valley	363	297
San Felipe	7,393	2,064
Warm Springs	3,507	1,344
Garden Creek	876	355
Bald Mountain	614	158
Thompson Creek	126	17
Split Hoof	204	121
Squaw Creek	444	101
Spud Creek	240	114
Pine Creek	179	127
East Fork	492	160
Sullivan Creek	81	53
Malm Gulch	0	0
Total	17,444	7,193

TABLE 8-4

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF PRESENT MANAGEMENT CONTINUES (ACRES)

	Present				No Action Alternative			
Allotment	Good	Fair	Poor	Rock, Douglas-Fir/Burn	Good	Fair	Poor	Rock, Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	2,186	8,480	8,988	3,541
Herd Creek	8,292	6,637	2,138	4,983	8,292	6,637	2,138	4,983
Road Creek	1,800	9,430	2,250	2,085	1,800	8,763	2,917	2,085
Bruno Creek	494	537	76	1,271	494	537	76	1,271
Round Valley	6,010	3,978	2,596	919	6,010	3,978	2,596	919
San Felipe	3,370	32,272	39,267	6,407	4,574	20,230	50,105	6,407
Warm Springs	5,063	36,513	15,839	2,288	5,063	25,752	26,600	2,288
Garden Creek	699	16,726	8,988	4,045	699	14,968	10,746	4,045
Bald Mountain	327	5,977	7,507	8,726	410	5,672	7,729	8,726
Thompson Creek	276	2,119	785	2,415	276	2,039	865	2,415
Split Hoof		5,153	2,759	503	0	4,993	2,919	503
Squaw Creek	760	1,036	2,651	2,597	760	752	2,935	2,597
Spud Creek	307	3,568	2,797	2,184	307	3,568	2,797	2,184
Pine Creek		3,903	559	564	992	2,911	559	564
East Fork	61	4,861	4,384	2,404	223	5,023	4,060	2,404
Sullivan Creek	4	1,383	512	1,671	4	890	1,005	1,671
Malm Gulch	4,166	2,130	2,208	692	4,110	2,188	2,206	692
Totals	33,815	145,440	103,567	47,300	36,200	117,381	129,241	47,300

TABLE 8-5

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF PRESENT MANAGEMENT CONTINUES (ACRES)

ALLOTMENT	PRESENT				NO ACTION			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/ BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red Lake	0	3,630	16,024	3,541	0	3,630	16,024	3,541
Herd Creek	0	570	16,497	4,983	*	*	*	*
Road Creek	0	4,789	8,691	2,085	0	4,789	8,691	2,085
Bruno Creek	0	0	1,107	1,271	0	0	1,107	1,271
Round Valley	0	0	12,014	919	0	0	12,014	919
San Felipe	3,960	24,500	46,449	6,407	3,960	24,500	46,449	6,407
Warm Springs	0	23,450	33,965	2,288	0	23,450	33,965	2,288
Garden Creek	0	6,970	19,443	4,045	0	6,970	19,443	4,045
Bald Mountain	3,670	2,630	7,511	8,726	3,670	2,630	7,511	8,726
Thompson Creek	2,020	520	640	2,415	2,020	520	640	2,415
Split Hoof	0	2,600	5,312	503	0	2,600	5,312	503
Squaw Creek	0	650	3,797	2,597	0	650	3,797	2,597
Spud Creek	620	0	6,052	2,184	620	0	6,052	2,184
Pine Creek	0	0	4,462	564	*	*	*	*
East Fork	2,520	0	6,786	2,404	2,520	0	6,786	2,404
Sullivan Creek	0	1,648	250	1,672	0	1,648	250	1,672
Malm Gulch	0	1,020	7,425	691	0	1,020	7,425	691
Total	12,790	72,977	197,055	47,300	12,790	72,977	197,055	47,300

*Indicates no change from the proposed action.

Soils

Sediment Yield. Under this alternative, after 15 years yield would increase 10 percent, or 43,000 tons annually, to an average of 1.45 tons per acre, as a result of continued loss of plant and litter cover.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-6. Predictions of wildlife replacement, losses, and displacement, as a result of this alternative, can be determined using Appendix 4-A, 4-B and 4-C.

Continuation of present management practices would be expected to yield desired IDF&G future population management objectives with the exception of bighorn sheep (see Table 8-2). This will occur because IDF&G future big game objectives in the Challis ES area are based on present population trends and habitat conditions. Bighorn sheep populations are not expected to reach management objectives in the Garden Creek Allotment because of the competition for space and forage with livestock. Bighorn population objectives in Road Creek, Spud Creek and East Fork Allotments would be achieved due to the lack of conflicts with livestock.

Even though future population objectives would be met, it is unlikely that they could be maintained. Big game habitat conditions on areas grazed by livestock would not be expected to improve and in some cases habitat condition would deteriorate because of present downward trend. Table 8-7 illustrates projected habitat conditions with no change in management action. Mule deer and antelope habitat would not change. Elk habitat conditions, when compared with the proposed action, would decline by 5,454 acres. Poor condition habitat would increase by 5,015 acres and good condition habitat would decrease by 439 acres. Bighorn sheep habitat condition would decline by 1,708 acres. Poor condition habitat would be increased by 868 acres and good condition habitat would decrease by 840 acres. When weighing the degree of impacts one must keep in perspective the minimal degree of big game-livestock and big game-wild horse use overlap areas.

TABLE 8-6

IMPACTS TO TERRESTRIAL WILDLIFE
NO ACTION
ALTERNATIVE 1

DISCRETE MANAGEMENT ACTIONS	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Habitat presently in a downward trend would continue. Cover and forage quality and quantity would decrease. Increase in stress, displacement/ elimination, mortality and decrease in natality, population and species diversity.	No immediate impacts to present populations or IDF&G 15 year objectives. However, the habitat would probably not be able to sustain the 15 year objectives for very long. With the exception of those areas presently in upward trend, quality and quantity of habitat on areas suitable to livestock and horses would continue to decrease. Carrying capacities decrease.	No impacts to present populations or IDF&G 15 year objectives. However, the habitat would probably not be able to sustain the 15 year objectives for very long. Quality and quantity of habitat on areas suitable to livestock would continue to decrease, reducing carrying capacities and future potential population increases.
Turnout Dates	Turnout dates would not affect present trend of vegetation. Therefore, nongame habitat would not be expected to change. Beneficial and adverse impacts associated with present vegetation and specific animal species would continue.	Same as proposed action but intensified due to large numbers of livestock.	Same as proposed action but intensified due to large numbers of livestock.
Grazing Systems	Herd Creek Grazing System would have same impacts as discussed in the proposed action.	Same impacts as proposed action except only on Herd Creek.	——→
Ecological Condition Change	Adverse impacts associated with lack of cover and forage, as discussed in proposed action would remain. Areas in upward trend would have habitat quality increased.	Same as Allocation of Forage except areas in upward trend would increase quality and quantity of habitat and areas in downward trend would continue to decrease habitat quality and quantity of spring range on livestock use areas.	Same as Allocation of Forage except areas in upward trend would increase quality and quantity of habitat and areas in downward trend would continue to decrease habitat quality and quantity on suitable livestock areas.

TABLE 8-6

IMPACTS TO TERRESTRIAL WILDLIFE
NO ACTION
ALTERNATIVE 1
(cont.)

DISCRETE MANAGEMENT ACTIONS	NON-GAME WILDLIFE	DEER	ELK
Social Interaction	Stresses associated with cows and horses (physical and social) would continue. Habitat quality would be decreased.	Same as proposed action only intensified, due to larger numbers of livestock, especially during spring.	Same impacts as proposed action only intensified.
Use of Riparian Zones by Livestock and Horses	Same adverse impacts as proposed action but impacts would be intensified.	Same as proposed action only intensified due to larger numbers of livestock.	Same as proposed action but riparian zones are not as important for providing food, water and cover to wintering elk.
Reduction in Wild Horses	No reduction proposed, however, present populations would continue to cause adverse impacts to nongame habitat. Some of these would be trampling of nests and young, competition for vegetation used for forage and cover and physical and social disturbances.	No reduction would cause continued social stress and competition for forage and reduction of habitat quality. Quality and quantity of habitat reduced.	No Impact.
Water Developments	Maintenance would have no impacts.	No impact.	→
Fences	Same as above.	→	→
Net Results of Alternative (Acres of Habitat Changed from Present Conditions)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 Fair 97,309 Good 6,840	Poor -149 Fair -1,177 Good 1,326

TABLE 8-6

IMPACTS TO TERRESTRIAL WILDLIFE
NO ACTION
ALTERNATIVE 1
(cont.)

DISCRETE MANAGEMENT ACTIONS	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Same as deer and elk.	Same as deer and elk except most critical on Marco Creek.	Same as other spp.
Turnout Dates	Same as proposed action.	→	Same as proposed action only intensified due to large numbers of livestock.
Grazing Systems	Same impacts as proposed action except only on Herd Creek.	No impact.	→
Ecological Condition Change	Same as deer and elk.	→	Same as other spp.
Social Interaction	Same impacts as proposed action only intensified.	Continued social interaction would cause stress to populations. This would lower viability and herd productivity.	Same as proposed action only intensified due to greater numbers of livestock.
Use of Riparian Zones by Livestock and Horses	Same as proposed action but intensified	Does not apply.	Same as proposed action except adverse impacts intensified.
Reduction in Wild Horses	No reductions proposed but would cause continued social stress, forage competition, decrease in carrying capacity and future population potential potential would also be decreased.	Does not apply.	Continued populations would cause adverse social impacts, competition for forage and nest trampling.
Water Development	No impact.	→	→
Fences	No impact.	→	→
Net Results of Habitat Change (Acres of Habitat Change)	Winter Poor -11,893 Fair -10,391 Good 1,502 Summer Poor -66,703 Fair 66,703 Good No Change	Poor -101 Fair -312 Good 412	Specificity of data not available to determine quantity of habitat enhanced.

TABLE 8-7

PROJECTED BIG GAME HABITAT CONDITION IN 15 YEARS
IN THE CHALLIS ES AREA WITHOUT THE PROPOSED ACTION A/

Allotment	Mule Deer B/ Habitat			Elk Habitat			Antelope Habitat B/ (Winter)			Antelope Habitat B/ (Summer)			Bighorn Sheep Habitat		
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	-	6,858	212				-	1,140	793	-	15,248	802			
Herd Creek	-	10,867	-	882	3,755	1,423				-	760	40			
Road Creek	6,856	6,534	-		333					2,865	7,395	540	237	1,922	
Bruno Creek	648	162	-	106	423	98									
Round Valley	-	-	3,975				-	1,083	1,767	-	11,543	607			
San Felipe	-	10,992	7,328	4,084	15,955	1,279	-	5,088	2,740	-	64,201	3,379			
Warm Springs	-	6,461	966				-	2,189	2,468	-	53,720	2,830			
Garden Creek	-	26,540	-	62	353	-	-	2,689	-	-	2,555	134	52	2,446	132
Pine Creek	3,056	764	1,206												
Spud Creek	6,328	1,582	-		614		738	82	-	1,920	2,640	240		569	
Split Hoof	-	9,140	-							-	6,935	365			
Thompson Creek	2,832	708	-	198	1,488	298									
Bald Mountain	-	9,238	3,772		126	103									
Squaw Creek	4,888	1,222	-	1,123	112	1,011									
East Fork	-	12,164	776	26	14	-							4,687	5,115	837
Sullivan Creek	40	2,974	1,006	120	598	89									
	24,648	106,206	19,241	6,601	23,772	4,301	738	12,271	7,768	4,785	164,997	8,937	4,976	10,052	969
Total Acres		150,095			34,674			20,777			178,719			15,998	
Percent of Total	17%	71%	12%	19%	69%	12%	4%	59%	37%	3%	92%	5%	31%	62%	6%

A/ Criteria for habitat condition classification can be found in Appendix 4-F.

B/ Much of the increased condition is due to the projected recovery of the winter kill on sagebrush that occurred in 1976-77.

Wildlife-Aquatic

If present land management practices continue, populations of anadromous fish would increase only as fish mortality decreases in the lower Columbia River system. Unscreened irrigation diversions would remain as a limiting factor for steelhead and salmon smolt production in the unit. Habitat degradation caused by livestock, wild horse, and wildlife use of Herd, Lake and Road Creek riparian areas would continue to reduce the carrying capacity of these streams for juvenile anadromous fish. Anadromous fish streams including Bayhorse, Squaw, Thompson, Big Lake, Big Boulder and Little Boulder Creeks would remain in their present condition (Table 2-25) since they are not significantly impacted by grazing or public land.

Resident trout streams with "poor" or "fair" habitat conditions (Table 2-23) caused by present grazing use would remain in their present condition because future grazing use would be similar to past use except Road Creek where 0.8 miles would change from fair to poor because of wild horse use. Continued siltation and other physical habitat changes in smaller streams would probably cause a small decrease in present populations of game fish where range conditions continue in a downward trend. Populations of non-game fish in tributary streams would be similarly affected by continuation of present grazing use.

Under this alternative most ranchers would stay in the livestock business. Retention of private lands along streams in agricultural production would benefit fish because adverse impacts associated with residential development would not occur.

Wild Horses

A limiting factor of maintaining the wild horse herd within the area (Map 2-14) is the winter range. Inventory data indicates that the area can support 340 wild horses. The present number of wild horses (586) is overstocking the winter range.

TABLE 8-8

PRESENT FORAGE REQUIREMENTS BY WILD HORSES
AND FORAGE PRODUCTION ON THE WILD HORSE RANGE

Allotment	Wild Horse Forage Requirements (AUMs)	Current Available Forage For Wild Horses (AUMs)
Red Lake	795	630
Road Creek	960	510
San Felipe/ Peck Canyon	1,935	1,230
Warm Springs	4,125	2,280
Split Hoof	615	240
Malm Gulch	360	210
	8,790	5,100

Table 8-8 indicates the wild horse range would be over grazed by 3,690 AUMs or about 246 animals. The quality and quantity of forage would decrease due to overgrazing and the range would be severely damaged (Daubenmire, 1968). The damaged range would eventually produce malnutrition die-offs and migration of horses to other habitat (Foote, Taber and Dasmann, 1971). Existing fences would deter free movement of the wild horses and could cause injuries or death from entanglement in barbed wire.

Spring, winter and fall grazing by livestock at the present stocking level would remove forage needed for wild horses. With the current stocking level of both wild horses and cattle, competition is very keen for forage. Over-utilization of the wild horse winter range would occur.

It is impossible to predict if wild horses would move from their present range as the forage resource deteriorates from overgrazing. Continued deterioration of the wild horse winter range would result in die-off of wild horses unless they moved into new areas they have not historically used. Presently, the wild horse winter range can maintain an average of 340 animals. Continued overgrazing of the winter range would result in maintaining fewer animals as range deteriorates. It is predicted there would be about 300 wild horses in the Challis Unit after 15 years. The range deterioration would result in malnutrition of animals which would lead to die-off during heavy snow cover winters. This die-off could be as high as 250-290 animals.

Livestock Grazing

After 15 years under this alternative, livestock grazing is predicted to be reduced from an average use of 17,444 (presently grazed) to 7,193 AUMs because of deterioration of the vegetation resource from overgrazing.

Economics

By 1995, assuming current trends continue, licensed use on the public land would average 14,201 AUMs in the Challis Unit. The population is expected to reach 4,817, and 1,989 persons would will be employed (Idaho Department of Water Resouses, 1976). The number of agricultural workers would decline by 13 percent from 1975 to 290. The number of government workers would increase by 64 percent from 1975. The increase would be mainly by state and local workers. There would be little change in the structure of ranch earnings. In 15 years under the no action alternative, net ranch income would be approximately $23,264 (based on 1977 costs and returns; and in 1977 dollars).

Public Values and Attitudes

Without changes in the level of permitted grazing on public livestock operators would probably develop slightly altered expectations regarding future availability of public grazing

privileges. Less relaxed attitudes about maintenance of current levels of use would have been induced by recent discussion of the proposed action. Heightened uncertainty would influence operators' plans for the future in unpredictable fashion and degree.

The immediate emotional response of affected operators and the community would be relief and possibly a softening of resentment toward BLM based on the assumption their objections regarding the proposed action had influenced the decision. Choice of this alternative, combined with recently improved cattle prices, would be likely to generate a temporary mood of optimism in local residents.

Interested environmental and wild horse groups based outside the Challis area would probably react to a no action alternative with outrage. Instead of Custer County residents experiencing a disillusionment with government, these groups would be alienated.

Trends in Custer County which would probably have been accelerated by the proposed action would continue at a slower pace. Ranchers with scenic property would probably continue to reluctantly sell bits and pieces of land to get them through the inevitable financial emergencies that afflict families from time to time. Assuming the demand for residential development continues, the area would probably continue to grow in population and change in character, but more gradually than with the proposed action. Slower changes would be easier for longtime residents to adjust to.

Unless industry comes to the area, an unlikely eventuality given its wilderness study potential, many young people would still have to go elsewhere to make a living. With continual high land prices, ranches coming up for sale would probably be bought by outsiders, more for recreational than economic livestock-raising purposes. Gradually, ranching in the area would probably be reduced to small-scale hobby-type operations rather than the full-time serious family business as they have been. This trend would accompany other changes in the Challis way of life which in sum would probably be viewed by current residents as the area's transformation to a "playground."

Over the long term it would be difficult for current residents to maintain the existing level of community cohesiveness and neighborly trust and cooperation in the context of projected developments. In sum, ongoing changes in the social life of the area which would be accelerated or intensified by the proposed action would probably occur anyway but more slowly and with less disruption to everyday life under the no action alternative.

Water

Water Use. Water consumption by livestock, wild horses, and wildlife under this alternative would be 8,861,025 gallons per year, the same as the current level.

Streamflow. This alternative would have an unmeasurable effect on river levels in the unit. The ground water in the unit would be unaffected by this alternative.

Water Quality. The impacts resulting from this alternative on water quality are of the same type as from the proposed action, the difference being the magnitude of each impact. It is possible to determine whether impacts will increase or decrease, i.e., whether conditions will deteriorate or be enhanced. But no studies or research have been conducted to help establish guidelines in determining the degree or intensity of each impact, e.g., we know that reducing the number of livestock along a stream, say 75 percent, from 100 head down to 25 head, will reduce the level of suspended sediment and fecal coliform bacteria, but the amount can only be determined by studies after the reduction in livestock is made.

TABLE 8-9

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 1

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Livestock	17,444 c/	300 d/	5,233,200
Wild Horses	7,032 c/	360 d/	2,531,520
Deer a/	36,949 c/	15 e,f/	554,235
Antelope	8,841 c/	30 g/	265,230
Elk	1,602 c/	150 d/	240,300
Bighorn Sheep	609 c/	60 h,i/	36,540
			8,861,025 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 8-2
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game animals. There is no data to predict what the increase would be.

Degradation of game fish habitat could result in fewer game fish. The quality of the recreational experience of fishing would deteriorate and could result in fewer fisherman-days use on the streams in the unit.

Cultural Resources

A continuation of present management would result in adverse impacts to cultural resources which were identified in Chapter 2. This would mean that 268 cultural sites and an unknown number of the estimated 750 cultural sites would continue to be disturbed by livestock grazing and related activities.

Wilderness

This alternative would be the same as a continuation of the present situation. The wilderness inventory and analysis process would continue unaffected by livestock grazing activities in the ES area.

ELIMINATION OF LIVESTOCK AND WILD HORSE GRAZING (ALTERNATIVE 2)

All livestock and wild horses would be removed from the public lands of the Challis area as administrated by BLM. The portion of the Herd Creek AMP in BLM land would be terminated. Domestic livestock trailing permits would be issued as necessary to allow livestock movement to or from National Forest lands, private and/or state-owned lands. State and private lands intermingled with public land would have to be fenced to keep livestock from trespassing on federal property. This would be the responsibility of the individual landowners.

No range improvements would be maintained or constructed unless necessary for other programs such as the wildlife program. Any range improvements, i.e., fences, which conflict with wildlife movement would be removed. There would be a continuation of other management functions in the area, guided by the management framework plan, i.e., those for timber, wildlife, minerals and recreation. Increased range supervision by BLM would be necessary to assure that operators adhere to conditions of trailing permits and that trespass does not occur. Administrative actions related to unauthorized use (trespass) would be taken in accordance with BLM Manual 9230.

The allocation of forage under this alternative would be as follows:

Livestock -	0
Wild Horses -	0
Wildlife -	7,772
	7,772

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the discontinuance of grazing by livestock and wild horses. The vegetation species presently providing forage for these animals would have an opportunity to complete their life cycles without receiving heavy levels of grazing. They could store maximum food reserves, maintain high vigor, produce seed and increase in abundance. Greater quantities of vegetation litter would be incorporated into the soil increasing the fertility and productivity. Beneficial impacts of

grazing such as seed trampling and stimulated vigor would not occur with this alternative. Allotment specific data concerning vegetation condition, trend and suitability is illustrated on Tables 8-10, 11, and 12.

A summary of the condition, trend, and available AUMs for the no grazing alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	126,642	+ 275
Fair	145,440	90,484	+ 38
Poor	103,567	65,696	- 37
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	149,303	+ 1,067
Down	72,977	570	- 99
Static	197,055	132,949	- 33
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Table 8-10 has been deleted.

TABLE 8-11

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF GRAZING IS DISCONTINUED BY LIVESTOCK AND WILD HORSES (ACRES)

	Present				No Grazing Alternative			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	10,018	4,361	5,275	3,541
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	6,395	4,990	2,095	2,085
Bruno Creek	494	537	76	1,271	1,002	105	0	1,271
Round Valley	6,010	3,978	2,596	919	9,988	0	2,596	919
San Felipe	3,370	32,272	39,267	6,407	26,593	26,258	22,058	6,407
Warm Springs	5,063	36,513	15,839	2,288	38,613	13,662	5,140	2,288
Garden Creek	699	16,726	8,988	4,045	7,447	11,050	7,916	4,045
Bald Mountain	327	5,977	7,507	8,726	1,078	6,001	6,732	8,726
Thompson Creek	276	2,119	785	2,415	426	2,048	706	2,415
Split Hoof		5,153	2,759	503	2,583	2,753	2,576	503
Squaw Creek	760	1,036	2,651	2,597	1,075	2,121	1,251	2,597
Spud Creek	307	3,568	2,797	2,184	3,875	92	2,705	2,184
Pine Creek		3,903	559	564	1,349	2,554	559	564
East Fork	61	4,861	4,384	2,404	1,391	4,808	3,107	2,404
Sullivan Creek	4	1,383	512	1,671	1,387	572	0	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	126,642	90,484	65,696	47,300

* Indicates no change from the proposed action.

TABLE 8-12

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF GRAZING BY LIVESTOCK AND WILD HORSES IS DISCONTINUED (ACRES)

ALLOTMENT	PRESENT				NO GRAZING ALTERNATIVE			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red Lake	0	3,630	16,024	3,541	10,808	0	8,846	3,541
Herd Creek	0	570	16,497	4,983	*	570	*	4,983
Road Creek	0	4,789	8,691	2,085	4,750	0	8,730	2,085
Bruno Creek	0	0	1,107	1,271	686	0	421	1,271
Round Valley	0	0	12,614	919	3,978	0	8,607	919
San Felipe	3,960	24,500	46,449	6,407	44,391	0	30,517	6,407
Warm Springs	0	23,450	33,965	2,288	48,548	0	8,867	2,288
Garden Creek	0	6,970	19,443	4,045	7,820	0	18,593	4,045
Bald Mountain	3,670	2,630	7,511	8,726	5,196	0	8,615	8,726
Thompson Creek	2,020	520	640	2,415	2,249	0	931	2,415
Split Hoof	0	2,600	5,312	503	2,769	0	5,143	503
Squaw Creek	0	650	3,797	2,597	1,715	0	2,732	2,597
Spud Creek	620	0	6,052	2,184	5,633	0	1,039	2,184
Pine Creek	0	0	4,462	564	1,349	0	3,113	564
East Fork	2,520	0	6,786	2,412	5,128	0	4,178	2,404
Sullivan Creek	0	1,648	250	1,672	1,898	0	0	1,672
Malm Gulch	0	1,020	7,425	691	2,385	0	6,120	691
Total	12,790	72,977	197,055	47,300	149,303	570	132,949	47,300

*Indicates no change from proposed action.

Soils

Sediment Yield. This alternative, no grazing, would cut sediment yield after 15 years by over 60 percent, to 162,000 tons annually, or .49 tons/acre. This would be the direct result of increased plant and litter cover and reduced soil surface disturbance.

Periodic wild fires would be expected to occur and would probably burn large areas. This would occur by an accumulation of dry, ungrazed vegetation catching fire (lightning or man caused) and spreading rapidly because of the heavy supply of fuel. Once an area burns it may be revegetated by annual species such as cheatgrass. The rangeland then becomes a greater fire hazard because of this species' nature of drying about mid-summer and burning characteristics.

Burning would result in fluctuation of stream water quality and sediment production from the area. However, burning could also result in improved cover if brush species are replaced by native grass species and would result in less sediment being produced in subsequent years.

Wildlife-Terrestrial

Big game habitat condition changes and populations are not expected to be significantly different under this alternative when compared with the proposed action. However, since all competitive uses for forage (cows and wild horses) are eliminated the vegetation in the use overlap areas would be expected to advance an ecological condition somewhat faster. In time, 25-50 years, big game populations would be expected to expand their use area somewhat and populations may increase, dependent on IDF&G harvest programs and environmental factors outside the ES area.

Impacts to nongame animals would vary dependent on their vegetation and vegetation condition association. Some species will benefit with increased ecological condition while others will decrease because of their dependency on subclimax and poorer condition vegetation.

Beneficial and adverse impacts are discussed in Table 8-13. Predictions of wildlife replacement, losses, and displacement, as a result of this alternative, can be determined using Appendix 4-A, 4-B and 4-C.

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Beneficial impacts would occur to those wildlife associated with better ecological conditions. Adverse impacts would occur to those species associated with disclimax and poor ecological condition. Food, water and cover more readily available and would increase in quality and quantity. Increased habitat diversity and species diversity until advanced successional stages are reached, then stabilization would occur.	No impacts would occur to present populations or IDF&G 15 year objectives. Quality and quantity of habitat on areas previously used by livestock and horses would increase with time. As carrying capacities are expected to increase over a period of time, population increases would be viable if IDF&G so desires.	→
Ecological Condition Change	Species associated with poor ecological condition (vegetation) would be replaced by species associated with better ecological condition. Diversity would increase and then stabalize towards climax conditions.	As ecological conditions approach climax, deer winter habitat (forage and cover) would be reduced on present winter ranges. However, if expansion of present use areas occurs, future population would not decline and may increase.	Significant positive habitat response to better ecological conditions would occur. Increased areas of use would be expected. Duration of stay on public lands would be longer. Year-round elk use area would be created some areas. Population increases viable in time if IDF&G so desires.
Social Interaction	Would be eliminated--physical encounters, forage competition and reduced stress to reproductive cycles are all beneficial impacts.	→	→
Use of Riparian Zones by Livestock and Horses	Same as impacts in allocation of forage (above) and ecological condition change, however, beneficial impacts would be accelerated and species diversity and populations associated with these areas would respond rapidly.	Same as allocation of forage (above). Increased use in these areas would be expected.	Increased calving habitat expected and may create yearlong use areas.
Elimination of Wild Horse and Livestock	Quality and quantity of habitat expected to improve. Improved carrying capacities would increase populations.	→	→
Fences	Not applicable.	Fenced caused mortality would be reduced.	
Land Development	Not applicable.	Same as proposed action.	
Net Results of Alternatives (Acres of Habitat Changed)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 a/ Fair 97,309 Good 6,840	Poor -5,164 Fair 3,399 Good 1,765

a/ Much of the increased habitat condition is due to the recovery of winter killed sagebrush that occurred in 1976 and 1977.

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2
(cont.)

DISCRETE MANAGEMENT ACTIONS	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	No impacts would occur to present populations or IDF&G 15 year objectives. Quality and quantity of habitat on areas previously used by livestock and horses would increase with time. As carrying capacities are expected to increase over a period of time, population increases would be viable if IDF&G so desires.	Also, expansion of existing use areas may occur.	→
Ecological Condition Change	Quality and quantity of habitat expected to increase for a time. As succession approaches climax, the carrying capacities would decrease due to the expected reduction of sagebrush densities.	No significant impacts to present populations, but future carrying capacities on historic and present sheep range would increase.	Habitat conditions would increase as well as carrying capacities.
Social Interaction	Would be eliminated--physical encounters, forage competition and reduced stress to reproductive cycles would be eliminated.	→	→
Use of Riparian Zones by Livestock and Horses	Rapid increase in habitat quality especially in wet meadow areas.	Improved forage and cover in these areas would increase capacity for bighorn use in them. Improve overall habitat quality.	Increased forage, cover, brood rearing and nesting habitat. Increased habitat quality.
Elimination of Wild Horses and Livestock	Quality and quantity of habitat expected to improve. Improved carrying capacities would increase populations.	→	→
Fences	Fenced caused mortality would be reduced.	→	→
Land Development	Same as proposed action.	→	→
Net Results of Alternative (Acres of Habitat Changed from Presend Condition)	Winter Poor -11,893 Fair 10,391 Summer Poor -66,703 Fair 66;703	Poor -969 Fair -283 Good 1,252	Specificity of information not available to determine impacts

Wildlife-Aquatic

Elimination of livestock and wild horse grazing on public land would improve anadromous fish habitat condition from "fair" to "good" on 0.8 miles of Squaw Creek and 1.2 miles of Herd Creek. Habitat conditions would be expected to improve from "good" to "excellent" on sections of Bayhorse (0.15 miles), Herd (1.0 miles), Lake (0.4 miles), and Big Lake (0.9 miles) Creeks.

Grazing use by the present numbers of wildlife would lead to improved riparian vegetation conditions, increased streambank stability and reduced stream siltation. Anadromous fish production in the unit would increase as these changes improved spawning and rearing habitat. There is no way to quantify anadromous fish population increases that would result from this alternative. No improvement in Thompson, Big Boulder and Little Boulder Creeks would occur because livestock grazing on public lands has not degraded these streams.

Salmon and steelhead habitat in 7.4 miles of Herd Creek would improve significantly if livestock grazing is eliminated in the unit. Present annual spawning runs of 281 salmon and a few steelhead would increase to runs of 1,725 salmon and 1,725 steelhead if all stream habitat improved to an "excellent" condition. However, silt from upstream Forest Service lands would continue to degrade Herd Creek within the Challis Planning Unit. Heavy livestock use of 3.6 miles of private land along Herd Creek would continue to degrade habitat and decrease overall fish production in Herd Creek due to stream siltation and removal of riparian vegetation.

Habitat conditions on most resident trout streams (40.3 stream miles) that adjoin public land would improve following exclusion of livestock and wild horse grazing in the unit. Riparian vegetation recovery and streambank stabilization in small streams following implementation of this alternative would decrease siltation of spawning areas and would increase the carrying capacity of the streams for fish.

Fourteen miles of streams in the Road Creek drainage are in poor condition (Table 2-25). Poor aquatic habitat conditions in Road, Horse Basin, Mosquito and Bear Creeks would improve substantially if wild horse and livestock use of this drainage is stopped. Riparian vegetation would re-establish throughout the drainage, improving resident trout habitat. Present soil erosion rates would decrease (see soils section of this alternative), and stream siltation would correspondingly decrease. Downstream spawning and rearing habitat for anadromous fish in the main Salmon and East Fork Rivers would improve as Road Creek's contribution of silt to these rivers diminishes.

Cattle trailing across BLM lands to Forest Service grazing allotments would result in localized riparian vegetation and streambank damage. These small scale, temporary stream disturbances would have only a minor impact on fish habitat in the unit.

Increased grazing due to wildlife population increase within 15 years is not expected to cause significant adverse impacts to fish production in the unit as big game increases will be slight. Traditionally big game animals spend summer months dispersed at higher elevations on Forest Service lands. Concentrated big game utilize riparian zones on public and private land during winter months when grazing/browsing is less damaging to stream banks.

Elimination of livestock grazing on BLM administered lands would force some ranchers out of business. Accelerated subdivision and development of floodplain areas would adversely impact fisheries production in the unit, as outlined in Chapter 3.

Wild Horses

Removal of wild horses from the Challis Unit would totally eliminate this resource from habitat historically used by wild horses for about 100 years. Areas formerly used by wild horses would no longer be grazed.

Livestock Grazing

The common cow-calf operation in the Challis Unit depends upon public lands for spring grazing. Discontinuance of all livestock grazing on public lands would require livestock operators to buy, lease, or develop forage to compensate for the loss of forage. Since there is a wide variation in the percentage public lands grazing represents in individual livestock operations, there would be a correspondingly wide variation in adverse impacts. Probably some individuals could or would not adjust to the change and would choose to sell or lease their ranches. Other operators would probably cut back the size of their breeding stock until a modified yearlong operation could be developed. Individual livestock operations which presently have a high percent of public lands grazing as part of the total operation and those involving larger numbers of livestock would probably experience the greatest adverse impacts.

Several ranch units could be sold as a result of this alternative, but an estimate of how many cannot be made objectively.

Private and state-owned land leased for grazing surrounded by or adjacent to public lands would probably be unavailable for grazing or would require herding until the lands could be fenced. Fencing of the lands would be required to avoid unauthorized use of public lands.

Presently 17,444 AUMs are grazed annually in the unit. To supplement feed for this loss of grazing use would require 6,978 tons of hay.

Economics

The impacts associated with this alternative would be significant to Custer County; approximately 38 families would lose all or a significant part of their income. This would mean a loss of $190,000 in livestock income. There would be corresponding decreases in other sectors. The potential secondary impacts would amount to $58,000 and the agriculture, trade and livestock sectors would be affected adversely. In 15 years under the no grazing alternative net ranch income would be zero.

Public Values and Attitudes

Most livestock operators who depend on BLM grazing privileges would probably be forced out of business under the no grazing alternative. Those whose property is attractive for residential purposes would probably sell to developers for subdivision. An indeterminable number of current ranchers would migrate out of the area and attempt to start a new life on the proceeds of selling their property. Development of recreational and residential potential of the area would probably proceed more rapidly under this alternative than any other. The county would experience accelerated population growth and the daily life of the community would become more depersonalized and less cohesive. For those who have lived in the area all their lives the choices of selling out and moving away or remaining behind to experience rapid changes in the social character of the community would probably be very painful. Trends and impacts described under the proposed action would be intensified and accelerated by the no grazing alternative.

Water

Water Use. Water consumption by wildlife under this alternative would be 1,045,560 gallons per year. This would be a decrease of 9,445,452 gallons per year below existing water consumption. The decrease is the result of reducing the number of large ungulates from the present level.

Streamflow. This alternative would have an unmeasurable effect on river levels in the unit. Some smaller streams would experience an increased flow because of less consumption. This would only occur on those small streams adjacent to areas that previously had heavy animal concentrations. The groundwater in the unit would be unaffected by this alternative.

Water Quality. The impacts resulting from this alternative on water quality are of the same type as from the proposed action, the difference being the magnitude of each impact. It is possible to determine whether impacts will increase or decrease, i.e., whether

conditions will deteriorate or be enhanced. But no studies or research have been conducted to help establish guidelines in determining the degree or intensity of each impact, e.g., we know that reducing the number of livestock along a stream, say 75 percent, from 100 head down to 25 head, will reduce the level of suspended sediment and fecal coliform bacteria, but the amount can only be determined by studies after the reduction in livestock is made.

TABLE 8-14

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 2

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Deer a/	38,846 c/	15 e,f/	582,690
Antelope	3,926 c/	30 g/	117,780
Elk	1,683 c/	150 d/	252,450
Bighorn Sheep	1,544 c/	60 h,i/	92,640
			1,045,560 gallons/year

a/ 135 lbs. average wt., Anderson (1975)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 3-21
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days. Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase, however, there is no data to predict what the increase would be. There would be no wild horses to view in the unit.

If ranchers sell their private land to land developers and the land is subdivided into summer home property there would be an increase of recreational use in the area. There is no data to quantify this impact.

Cultural Resources

Implementation of Alternative 2 would result in a significant decrease in adverse influences to cultural resources which were identified in Table 2-2. Essentially, 268 cultural sites, and an unknown number of the estimated 740 unknown cultural properties, would no longer be disturbed by livestock grazing and related activities. Stabilized soil conditions resulting from revegetated areas would reduce adverse impacts to cultural properties.

Some disturbance to cultural sites could occur as a result of fencing private land to prevent trespass livestock grazing.

Wilderness

This alternative would have the effect of removing some of the activities and influences of man from the ES area. This action would enhance the wilderness character of the area and serve to rehabilitate vegetation in former livestock concentration areas. These impacts would occur in both the short term and long term. The overall effect of this alternative would be minimal.

MINIMUM CONSTRAINTS ON LIVESTOCK GRAZING (ALTERNATIVE 3)

This alternative maximizes livestock grazing within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-15. Range improvements and vegetation manipulations required to implement this alternative are shown in Table 8-16.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 91 head. They would fluctuate between 75 and 114. A gathering program would be required every two years in order to maintain the herd at the average level.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in an increase in use made by livestock and a decrease in the use made by wild horses and wildlife. This alternative would allocate 2,020 more AUMs to livestock than the proposed action. The major impact that would result from this alternative would be the increased utilization rates received by the desirable grazing areas. Those areas with gentle slopes and available water would provide the major portion of the 2,020 additional AUMs. The palatable vegetation species would receive increased levels of the following adverse impacts:

1. Decreased vigor
2. Decreased seed production
3. Decreased seedling establishment
4. Decreased litter accumulation

The beneficial aspects of spring rest afforded by the grazing systems would partially be negated by the increased forage utilization rates proposed in this alternative. Table 8-18, 19 and 20 show the results of this alternative on vegetation condition, trend, and AUMs available for livestock. All projections are based on conditions as they would occur after fifteen years under the minimum constraints to livestock alternative.

A summary of the vegetation condition, trend, and suitability data for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	74,052	+119
Fair	145,440	116,281	- 20
Poor	103,567	92,489	- 11
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	64,725	+406
Down	72,977	1,137	- 98
Static	197,055	216,960	+ 10
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

TABLE 8-15

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (Cattle) Class	Numbers	Season of Use*	AUMs	Specific Grazing System	Wild Horses Numbers	Season of Use	AUMs
Red Lake	Cattle	419	5/1 to 6/30	838	Seasonal	11	Yearlong	172
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	290	5/1 to 6/30	580	Seasonal	6	Yearlong	97
Bruno Creek	Cattle	29	5/16 to 9/30	130	Seasonal			
Round Valley	Cattle	234	5/1 to 6/30	469	Seasonal			
San Felipe/ Peck Canyon	Cattle	685	5/1 to 9/29	3,788	Rest-Rotation 3 Pasture	11	Yearlong	172
Warm Springs	Cattle	939	5/1 to 12/15	2,738	Rest-Rotation 5 Pasture	59	Yearlong	880
Garden Creek	Cattle	384	5/1 to 6/30	768	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	212	5/1 to 6/30	425	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	24	5/16 to 10/15	124	Deferred Rotation 3 Pasture			
Split Hoof	Cattle	100	5/1 to 6/30	201	Seasonal	4	Yearlong	60
Squaw Creek	Cattle	100	5/1 to 6/30	199	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	118	5/1 to 6/30	236	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	5/16 to 6/10 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	127	5/1 to 6/30	254	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	62	5/1 to 6/30	123	Seasonal			
Malm Gulch		0	None	0	No Grazing			
Total		4,518		12,456		91		1,381

* Does not necessarily reflect the total season of use, but rather depicts the main season of use.

TABLE 8-15

Wildlife [a/]

Allotment	Elk Numbers	Elk Season of Use	Elk AUMs	Deer Numbers	Deer Season of Use	Deer AUMs	Antelope Numbers	Antelope Season of Use	Antelope AUMs	Bighorn Sheep Numbers	Bighorn Sheep Season of Use	Bighorn Sheep AUMs
Red Lake				378	Winter/Spring	417	70	Winter				
							30	Spr/Summer/Fall	38			
Herd Creek	20	Winter/Spring	38	500	Winter/Spring	552	20	Spr/Summer/Fall	9			
Road Creek				361	Winter/Spring	399	65	Spr/Summer/Fall	31	11	Winter/Spring	11
Bruno Creek	11	Winter/Spring	21	86	Winter/Spring	37						
Round Valley				40	Winter/Spring	44	150	Winter	78			
							58	Spr/Summer/Fall				
San Felipe/	113	Winter/Spring	219	140	Winter/Spring	154	506	Winter	283			
Peck Canyon				31	Summer/Fall		270	Spr/Summer/Fall				
Warm Springs				200	Winter/Spring	221	210	Winter	219			
							315	Spr/Summer/Fall				
Garden Creek	34	Winter/Spring	21	748	Winter/Spring	825	33	Yearlong	27	56	Winter/Spring	58
Bald Mountain	10	Winter/Spring	19	850	Winter/Spring	937						
Thompson Creek	36	Winter/Spring	54	217	Winter/Spring	240						
Split Hoof				158	Winter/Spring	175	30	Spr/Summer/Fall	14			
Squaw Creek	26	Winter/Spring	50	236	Winter/Spring	262						
Spud Creek	4	Winter/Spring	8	215	Winter/Spring	236	120	Winter	47	14	Winter/Spring	14
							15	Spr/Summer/Fall				
Pine Creek				124	Winter/Spring	137						
East Fork	5	Winter/Spring	10	249	Winter/Spring	274				48	Winter/Spring	50
Sullivan Creek	5	Winter/Spring	10	134	Winter/Spring	147						
Malm Gulch	0	None	0	0	None	0						
Total	264		450	4,636		5,057	1,089	Winter	746	129		133
							803	Spr/Summer/Fall				

[a/] Big game number presented in Table 8-2 would probably also be obtained in this alternative. However it is felt that they would probably fall back to the numbers presented in this table due to insufficient forage allocation in livestock/big game overlap areas.

TABLE 8-16

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 3

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1510	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	5900	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	5	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	58.05	51	44.5	31	26,975	1,510	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

Total cost of projects estimated to be $861,825.00.

Range Improvements

Construction of range improvements would temporarily remove about 80 acres from production and permanently remove approximately 11 acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 29,485 acres initially disturbed by vegetation manipulations (see Table 8-17).

The overall impact of brush beating 26,975 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,510 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetation cover the first spring season after the treatment (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

TABLE 8- 17

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 3

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	58.1	1	.002	58.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	26,975	1	-	26,975	-
Plow and Seed	Acres	1,510	1	-	1,510	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-18

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO LIVESTOCK ALTERNATIVE

Allotment	Initial AUMs Under This Alternative	Future AUMs Available For Livestock
Red Lake	838	1,033
Herd Creek	1,411	1,411
Road Creek	580	296
Bruno Creek	130	62
Round Valley	469	516
San Felipe	3,788	5,617
Warm Springs	2,738	3,651
Garden Creek	768	893
Bald Mountain	425	356
Thompson Creek	124	32
Split Hoof	201	186
Squaw Creek	199	255
Spud Creek	236	201
Pine Creek	181	317
East Fork	254	299
Sullivan Creek	123	47
Malm Gulch	0	0
Total	12,456	15,172

TABLE 8-19

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS UNDER ALTERNATIVE 3 (ACRES)

	Present				Minimum Constraints on Livestock			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	6,078	6,804	6,772	3,541
Herd Creek	8,292	6,637	2,133	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	2,173	9,070	2,237	2,085
Bruno Creek	494	537	76	1,271	509	527	71	1,271
Round Valley	6,010	3,978	2,596	919	8,001	1,987	2,596	919
San Felipe	3,370	32,272	39,267	6,407	16,197	19,445	39,267	6,407
Warm Springs	5,063	36,513	15,839	2,288	17,988	29,875	9,552	2,288
Garden Creek	699	16,726	8,988	4,045	4,333	13,547	8,533	4,045
Bald Mountain	327	5,977	7,507	8,726	752	5,991	7,068	8,726
Thompson Creek	276	2,119	785	2,415	318	2,099	763	2,415
Split Hoof	--	5,153	2,759	503	748	4,458	2,706	503
Squaw Creek	760	1,036	2,651	2,597	957	1,713	1,777	2,597
Spud Creek	307	3,568	2,797	2,184	850	3,035	2,787	2,184
Pine Creek	--	3,903	559	564	*	*	*	*
East Fork	61	4,861	4,384	2,404	730	4,834	3,742	2,404
Sullivan Creek	4	1,383	512	1,671	4	816	1,079	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	74,052	116,281	92,489	47,300

* Indicates no change from the proposed action

TABLE 8-20

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND
AFTER FIFTEEN YEARS IF ALTERNATIVE 3 IS IMPLEMENTED (ACRES)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON LIVESTOCK			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	5,371	-0-	14,283	3,541
Herd Creek	-0-	570	16,497	4,983	*	*	*	*
Road Creek	-0-	4,789	8,691	2,085	386	-0-	13,094	2,085
Bruno Creek	-0-	-0-	1,107	1,271	20	-0-	1,087	1,271
Round Valley	-0-	-0-	12,614	919	1,991	-0-	10,594	919
SanFelipe	3,960	24,500	46,449	6,407	16,785	-0-	58,123	6,407
Warm Springs	-0-	23,450	33,965	2,288	19,212	-0-	38,203	2,288
Garden Creek	-0-	6,970	19,443	4,045	4,089	-0-	22,324	4,045
Bald Mountain	3,670	2,630	7,511	8,726	4,534	-0-	9,277	8,726
Thompson Creek	2,020	520	640	2,415	2,084	-0-	1,096	2,415
Split Hoof	-0-	2,600	5,312	503	801	-0-	7,111	503
Squaw Creek	-0-	650	3,797	2,597	1,071	-0-	3,376	2,597
Spud Creek	620	-0-	6,052	2,184	1,173	-0-	5,499	2,184
Pine Creek	-0-	-0-	4,462	564	*	*	*	*
East Fork	2,520	-0-	6,786	2,404	3,831	-0-	5,475	2,404
Sullivan Creek	-0-	1,648	250	1,672	-0-	1,722	176	1,672
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	64,725	1,137	216,960	47,300

* Indicates no change from the proposed action.

Soils

Sediment Yield. Fifteen years under this alternative would increase vegetation and litter enough to change sediment yield from about 1.32 tons/acre (presently occurring unit wide) to an average of about .87 tons/acre or a reduction of about one-third per year. Total sediment yield for the Challis Unit under this alternative would be 288,000 tons.

Wildlife-Terrestrial

Population levels would be expected to reach those presented in Alternatives 1 and 2. However, these populations would probably drop back in 15 years, due to insufficient allocation of forage to big game. The allocation of forage in this alternative would not adequately supply forage for the IDF&G population objectives. Elk would receive 111 AUMs less than the proposed action, decreasing the IDF&G objectives by 53 animals. Likewise, allocation for deer would be shy by 1,109 AUMs and 988 animals; antelope by 72 AUMs and 174 animals; and bighorn sheep, 94 AUMs and 91 animals. In this alternative the competitive forage allocated to big game species (337 AUMs) in the proposed action was reallocated to livestock as well as another 1,103 AUMs of noncompetitive forage (due to suitability) from 20 percent of the forage on slopes greater than 50 percent.

Since livestock grazing is only decreased 2,020 AUMs over the entire ES area, acres of habitat condition changed as a result of this alternative, are expected to be the same as the proposed action (Table 3-9). However, the changes are expected to be at a slightly slower rate.

Beneficial and adverse impacts are discussed in Table 8-21. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 4-A, 4-B and 4-C.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Impacts same as proposed action except accelerated adverse impacts in the bottomlands.	No immediate benefits or adverse impacts will occur to existing population trends or 15 year goals. Habitat quality and quantity would increase. However, long-term forage needs for IDF&G objectives would not be met. Habitat quality and quantity for long-term maintenance needs would be lacking.	→
Turnout Dates	Impacts same as proposed action.	Same as proposed action but adverse impacts intensified due to increased livestock numbers.	Same as proposed action.
Grazing Systems	Impacts same as proposed action except adverse impacts accelerated.	Same as proposed action except where habitat response to treatment is expected, beneficial impacts would be achieved at a slower rate.	→
Ecological Condition Change	Impacts same as proposed action except habitat increasing in condition would be slower and habitat in downward trend would be accelerated. Impacts would correspond accordingly.	→	→
Social Interaction	Same as proposed action except adverse impacts accelerated.	→	Same as proposed action.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3
(cont.)

DISCRETE MANAGEMENT ACTIONS	NON-GAME WILDLIFE	DEER	ELK
Use of Riparian Zones by Livestock and Horses	Impacts same as proposed action but adverse impacts intensified due to increased livestock numbers.	→	→
Reduction in Wild Horses	Adverse impacts same as proposed action but lessened.	Less impacts from social interaction and forage competition on winter and spring ranges. Less habitat stress.	Present adverse social conflicts would be minimized by displacement of horses presently in elk use areas. Increase in habitat quality.
Water Development	Same as proposed action.	→	→
Fences	Same as proposed action except including Spud Creek Allotment with adverse impacts.	Same as proposed action.	→
Brush Beating	Same as proposed action, except impacts expanded to an additional 5,900 acres in Spud Creek Allotment.	Brush beating on Spud Creek would reduce a significant portion of crucial and general winter range. Carrying capacity would be reduced and stress to existing populations would result in lower population. Impacts the same as the proposed action on other areas.	Same as proposed action.
Plow and Seed	Same as proposed action.	No impact.	→
Burning	Same as proposed action.	→	→
Land Development	Not applicable.	Same as proposed action.	Not applicable.
Net Results of Alternative (Acres of Habitat Changed)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 a/ Fair 97,309 Good 6,840	Poor -5,164 Fair 3,399 Good 1,765

a/ Much of the increased habitat condition is due to the recovery of winter killed sagebrush that occurred in 1976-1977.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	No immediate benefits or adverse impacts will occur to existing population trends or 15 year goals. Habitat quality and quantity would increase. However, long-term forage needs for IDF&G objectives would not be met. Since not enough forage has been allocated habitat quality and quantity for long-term maintenance needs would be lacking.	→	→
Turnout Dates	Same as proposed action.	→	→
Grazing Systems	Same as proposed action except where habitat response to treatment is expected, beneficial impacts would be achieved at a slower rate.	Continued livestock grazing on bighorn sheep range will significantly reduce population potential. Short-term beneficial impacts the same as proposed action. Adverse impacts from social interaction and forage competition would occur in Marco Creek.	Same as proposed action.
Ecological Condition Change	Same as proposed action.	Same as for non-game, deer, elk.	Same as proposed action but beneficial impacts somewhat less and adverse impact slightly increased due to more livestock.
Social Interaction	Same as proposed action.	Social conflicts with livestock would occur, reducing viability and habitat quality.	Same as proposed action.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Use of Riparian Zones by Livestock and Horses	Impacts same as proposed action but adverse impacts intensified.	Continued abuse of riparian zone along Marco Creek which discourages sheep use and limits habitat potential.	Same as proposed action but adverse impacts intensified due to increased livestock numbers.
Reduction in Wild Horses	Same as proposed action but beneficial impacts significantly increased.	No impact.	Same as proposed action except adverse impacts decreased.
Water Development	Same as proposed action.	→	→
Fences	Same as proposed action.	No impact.	→
Brush Beating	Brush beating in Spud Creek would eliminate a significant portion of the antelope habitat most of which is crucial habitat. Populations would be drastically reduced. Impacts on other areas would be the same as the proposed action.	No impact.	Same as proposed action.
Plow and Seed	No impact.	→	→
Burning	Same as proposed action.	→	→
Land Development	Same as proposed action.	→	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Winter: Poor -11,893; Fair 10,391; Good 1,502 Summer: Poor -66,703; Fair 66,703; Good No Change	Poor -969; Fair -283; Good 1,252	Specificity of information not available to determine impacts quantitatively.

Wildlife-Aquatic

Relative to the proposed action, minimum constraints on livestock would decrease unitwide grazing by livestock, wild horses and wildlife (deer, elk, antelope, sheep) by 469 AUMs. The impacts of this alternative on aquatic habitat would be the same as in the proposed action, except in the Herd Creek drainage.

Continuation of the Herd Creek Allotment Plan with no provisions for fencing riparian-aquatic habitat would maintain Herd and Lake Creeks in their present "fair-good" condition. Habitat degradation caused by livestock and wildlife use of riparian areas in the Herd Creek watershed would continue to increase siltation of spawning gravels and reduce the carrying capacity of these streams for resident and anadromous fish. Annual spawning runs of 281 salmon and few steelhead in Herd Creek would remain constant.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 91 animals would result in widely dispersed bands of wild horses. This could lead to significant breeding problems. Kirkpatrick (1978) indicates that in the Pryor Mountain Wild Horse Area a herd of 75 animals is the minimum number for breeding a healthy, viable herd. At the stocking level of 91 wild horses, this minimum level is being approached. Protecting Malm Gulch and Sand Hollow watershed from wild horse grazing would have no impact on the herd at the 91 wild horse level.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would have the same kinds of impacts on the proposed action. It is impossible to quantify the difference in intensity of impact, but the higher level of grazing by livestock in this alternative would indicate competition for forage on the winter range would be greater.

Livestock Grazing

Implementation of Alternative 3 would significantly affect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 3 season of use (Table 8-22) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, two would no longer be allowed fall grazing and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 15 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 2,716 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use, an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 2,716 AUMs are considered for livestock use in the future.

Initial stocking rate	12,456 AUMs
Increased production after 15 years	2,716 AUMs
	15,172 AUMs

This would be 87 percent of the current eight years average use.

TABLE 8-22

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 3, CHALLIS UNIT

Present Use		Alternative 3 Level of Use		Change Resulting From Alternative 3	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	12,456	4,158	4,988	3,542

If the forage (4,988 AUMs) identified in Table 8-22 were replaced by hay, it would require 1,995 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 3 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 3,542 cattle number in Table 8-22.

It is estimated that 20 percent of the livestock operators could adjust to a lower level of cattle use on the public land. These would be small operators that have taken partial non-use or total non-use in recent years.

If livestock operators reduced their herd size, they would graze fewer cattle on the national forest and lose a permit for the cattle not grazed. If operators were fenced out of business, they would lose their total forest permit.

Economics

Under this alternative the small ranchers would gain, on the average, eight AUMs from their current grazing levels. This would enable them to purchase two additional cows or to use the AUMs to feed their present herd. This latter policy would reduce their net loss to $398. Most small operators will probably use their eight AUMs to feed their existing herd.

Intermediate operators would lose 42 AUMs, on the average, from their present grazing. If they were to purchase hay, their net income would be reduced by $840 to $9,223. If the intermediate ranchers were to reduce their herd size, they would lose 23 cows on the average. This would reduce their net income to $7,129.

Large operations would lose an average of 879 AUMs from their current grazing. If they were to purchase hay this would cost an additional $17,580 and would reduce their net profit to a net loss of $11,556. If these ranchers were to reduce herd size they would lose an average of 440 cattle. This translates into an average loss of $53,328.

TABLE 8-23

COMPARISON OF LIVESTOCK INCOME
UNDER TWO MANAGEMENT STRATEGIES

RANCH SIZE	MEAN AUMs 8-YR AVERAGE	MEAN CHANGE FROM 8-YR AVERAGE USE	PERCENTAGE CHANGE FROM 8-YR AVERAGE	NET INCOME OR LOSS FROM PURCHASE OF HAY	NET INCOME OR LOSS FROM HERD CHANGE
Small	58	+8 (gain)	14 (increase)	-$ 398	-$ 600
Intermediate	234	-42	17.95	$ 9,223	$ 7,129
Large	2,509	-879	35.03	-$11,556	-$53.328

Source: BLM Idaho State Office, 1978.

Total livestock income for 38 operators would be reduced by approximately $70,000 and secondary impacts would result in an additional loss of $21,000. In 15 years under the maximum livestock alternative, net ranch income would be approximately $156,230 (based on 1977 costs and returns, and in 1977 dollars).

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

TABLE 8-24

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT REDUCTION IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 15,436*
Sale of Yearlings	10,357*
Sale of Cull Cows and Bulls	5,389*
Other Receipts	--
Gross Returns	$ 31,182*
Expenses	
Land Rent	166
Feed	3,153*
Livestock Expenses	558*
Livestock Purchased	10,554
Insurance	1,098
Labor Expense	1,068
Taxes	1,017
Seed & Fertilizer	1,642*
Machinery Operating Expenses	3,311
Repairs	1,892
Utilities	1,046
Federal Grazing Fees	1,339*
Association Fees	48
Supplies	182*
Misc. Expenses	448*
Interest Expenses	4,274
Total Cash Expenses	$ 31,796*
Net Ranch Cash Income (Gross returns minus cash expenses)	(614)*
Change in Inventory	7,743
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	7,129*

*Adjusted for reduced herd size

TABLE 8-25

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT
REDUCTION IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$106,965*
Sale of Yearlings	17,957*
Sale of Cull Cows and Bulls	25,461*
Other Receipts	10,394*
Gross Returns	$160,777*
Expenses	
Land Rent	4,667
Feed	3,077*
Livestock Expenses	4,207*
Livestock Purchased	38,316
Insurance	11,955
Labor Expense	44,789
Taxes	12,770
Seed & Fertilizer	5,508*
Machinery Operating Expenses	13,014
Repairs	18,887
Utilities	12,708
Federal Grazing Fees	8,840*
Association Fees	292
Supplies	2,367*
Misc. Expenses	8,358*
Interest Expenses	47,332
Total Cash Expenses	$237,087*
Net Ranch Cash Income (Gross returns minus cash expenses)	(76,310)*
Change in Inventory	22,981
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(53,328)*

*Adjusted for reduced herd size

TABLE 8-26

ECONOMIC IMPACTS OF ALTERNATIVE 3 ON
RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	146	144	-49.66	137	-48.41	8.05
Baker, Richard	213	209	108	105	-49.30	101	-48.33	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	204	154	-43.02	142	-41.04	27.07
Bradshaw, Eugene	57	56	65	-8	14.04	-9	16.07	15.73
Bradshaw, Kenneth	172	119	158	14	-8.14	-39	32.77	25.50
Carlisle, Lewis	539	228	234	305	-56.59	-6	2.63	35.88
Chivers, Garth	278	16	161	117	-42.09	-145	906.25	15.42
Cominotti, Fabio	264	246	100	164	-62.12	146	-59.35	11.45
Corrigan, Dick	88	78	44	44	-50.00	34	-43.59	14.97
Cutler, Howard	180	148	89	91	-50.56	59	-39.86	11.52
Ennis, Mrs. James L	134	127	130	4	-2.99	-3	2.36	31.72
Hammond, John	183	147	84	99	-54.10	63	-42.86	12.69
Hammond, Robert	38	17	25	13	-34.21	-8	47.06	12.57
Hanson, Margaret	465	333	220	245	-52.69	163	-42.56	15.99
Helm, Calvin	104	39	52	52	-50.00	-13	33.33	7.86
Horning, Tim	24	9	11	13	-54.17	-2	22.22	24.39
Ingram, Will	5,542	4,521	3,979	1,563	-28.20	542	-11.99	24.83
Jan Mar Corp.	904	385	395	509	-56.31	-10	2.60	30.11
Keppner, Ray	230	199	106	124	-53.91	93	-46.73	7.66
Laverty, Ray	141	1	71	70	-49.65	-70	100	12.47
Leuzinger, George	65	41	60	5	-7.69	-19	46.34	7.72
Leuzinger, Jake & Son	186	145	81	105	-56.45	64	-44.14	20.61
Maraffio, Frank	300	226	192	108	-36.00	34	-15.04	14.27
Peck, Joseph	262	72	120	142	-54.20	-48	66.67	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	71	84	-54.19	65	-47.79	3.78
Piva Brothers	413	337	208	205	-49.64	129	-38.28	4.92
Pleus, Herman	50	25	57	-7	14.00	-32	128.00	13.30
San Felipe Ranch	8,375	7,396	3,788	4,587	-54.77	3,608	-48.78	23.26
Sherwood, Archie	55	45	49	6	-10.91	-4	8.89	11.34
Smith, Kenneth	55	36	25	30	-54.55	11	-30.56	14.68
Stark, Kenneth	15	9	7	8	-53.33	2	-22.22	4.14
Stevens, Robert	29	7	13	16	-55.17	-6	85.71	4.01
Westgard, Gean	240	48	160	80	-33.33	-112	233.33	7.99
Westgard, Golden	155	155	104	51	-32.90	51	-32.90	3.23
Wooley, Dan	552	429	388	164	-29.71	41	-9.56	25.27
Yates, Ralph	473	467	441	32	-6.77	26	-5.57	15.33
Totals	21,900	17,447	12,462	9,433		4,985		

Water

Water Resources. Water consumption by livestock, wild horses and major wildlife is estimated to be 4,947,675 gallons per year under this alternative. This would be a decrease of 3,913,350 gallons, excluding evaporation, from the present water use levels (Table 2-31). The decrease in water consumption is due to a decrease in the numbers of grazing animals presently grazing the planning unit. This would result in 3,913,350 gallons of surplus water for other consumptive uses.

Streamflow. This alternative would have an unmeasurable effect on streamflow in perennial streams within or downstream from the Challis Planning Unit. Storm runoff is expected to decrease slightly below the existing levels in the planning unit. This decrease is due to increased infiltration rates under intensive range management, and a projected long-term increase in vegetation cover. Impacts related to streamflow are the same as the proposed action.

Water Quality. See Proposed Action for analysis as impacts are the same.

TABLE 8-27

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 3

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Livestock	12,456 c/	300 d/	3,736,800
Wild Horses	1,092 c/	360 d/	393,120
Deer a/	31,859 c/	15 e,f/	477,885
Antelope	3,581 c/	30 g/	107,430
Elk	1,188 c/	150 d/	178,200
Bighorn Sheep	904 c/	60 h,i/	54,240
			4,947,675 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 8-15
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days. Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase, however, there is no data to predict what the increase would be.

There would be fewer wild horses to view in the unit. It would require considerable effort on passing recreationists to view the horses remaining under this alternative.

If ranchers sell their private land to land developers and the land is subdivided into summer home property there would be an increase of recreational use in the area. There is no data to quantify this impact.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites). This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and stream-bank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 3 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

Wilderness

Although the potential for establishing wilderness areas in the ES area is not presently known, impacts listed here would result if this alternative was implemented in an area with wilderness potential. Such impacts to potential wilderness would result from the construction of fences, access roads, and water developments. Impacts would be in the form of scars on the landscape due to construction activities. Visual impacts would result from the appearance of man-made features that would change the wilderness character of the area. These impacts would occur in the short term, but would be of long-term duration. However, if any area within the ES area is identified as having wilderness potential and is formally identified as a wilderness study area, implementation of any part of the proposed action in that area which would change its wildenress character would be deferred. If such an area was established as a wilderness area, the deferment would be permanent; if not, the proposed action would ultimately be completely implemented.

MINIMUM CONSTRAINTS ON WILDLIFE (ALTERNATIVE 4)

This alternative maximizes the wildlife resource within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-28. Range improvements and vegetation manipulation required to implement this alternative are shown on Table 8-29.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 141 head. They would fluctuate between 100 and 176. A gathering program would be required every three years in order to maintain the herd at the average level.

Livestock and wild horse use would be eliminated in the Horse Basin and Corral Basin watershed (20,352 acres) for the benefit of the anadromous fish habitat in the Road Creek drainage. A total of 24.9 miles of streams (3.8 miles along Herd Creek; 4 miles along Lake Creek; and 17.1 miles along Road Creek, including tributaries of Mosquito and Bear Creek) would be fenced to protect the anadromous fish habitat. Turnout dates for livestock would be no earlier than June 15. Livestock grazing would be eliminated in the bighorn sheep winter ranges (15,998 acres) in the East Fork Allotment. No livestock water would be developed in 2,291 acres of elk crucial winter range in the San Felipe/Peck Canyon Allotment.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would allocate the same number of AUMs to wildlife as the proposed action. However, the number of AUMs allocated to livestock and wild horses would be reduced. A total of 20,352 acres would be protected from livestock and wild horse use in the Horse Basin and Corral Basin watersheds. About 16,000 acres would be protected from livestock grazing on the bighorn sheep winter ranges. About 25 miles of streams would be fenced on Herd Creek, Lake Creek, and Road Creek. The vegetation in those areas protected from grazing by livestock and wild horses would respond in the following ways:

1. Vigor would be increased
2. Seed production would be increased
3. Seedling establishment would be improved
4. Accumulation of litter would be increased

Livestock grazing on the remainder of the ES area would be allowed only after June 15th each year. This would eliminate all impacts (as identified in Chapter 3) that would occur as a result of turning livestock into the allotments prior to the range readiness date. A June 15th turnout date would allow the key forage plants to meet their physiological requirements and store adequate quantities of carbohydrate reserves. This would tend to develop a healthy stand of desirable native vegetation and would ultimately result in increased forage production. Tables 8-31, 8-32 and 8-33 illustrate the predicted changes in vegetati condition, trend, and availability of AUMs after 15 years under Alternative 4.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	102,000	+202
Fair	145,440	110,714	- 24
Poor	103,567	70,108	- 32
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	113,589	+788
Down	72,977	570	- 99
Static	197,055	168,663	- 14
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

TABLE 8-28

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (Cattle) Class	Numbers	Season of Use	AUMs	Specific Grazing System	Wild Horses Numbers	Season of Use	AUMs
Red Lake	Cattle	307	6/16 to 8/15	613	Seasonal	22	Season Long	330
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	173	6/16 to 8/15	346	Seasonal	18	Season Long	270
Bruno Creek	Cattle	19	6/16 to 10/30	85	Seasonal			
Round Valley	Cattle	219	6/16 to 8/15	438	Seasonal			
San Felipe/ Peck Canyon	Cattle	519	6/16 to 11/15	2,868	Rest-Rotation 3 Pasture	20	Season Long	300
Warm Springs	Cattle	614	6/16 to 1/30	1,790	Rest Rotation 6 Pasture	72	Season Long	1,095
Garden Creek	Cattle	300	6/16 to 8/15	600	Rest Rotation 4 Pasture			
Bald Mountain	Cattle	148	6/16 to 8/15	296	Rest Rotation 3 Pasture			
Thompson Creek	Cattle	10	6/16 to 11/15	51	Deferred Rotation 3 Pasture*			
Split Hoof	Cattle	59	6/16 to 8/15	118	Seasonal	8	Season Long	120
Squaw Creek	Cattle	67	6/16 to 8/15	133	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	88	6/16 to 8/15	177	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	6/16 to 7/15 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	0	None	0	None			
Sullivan Creek	Cattle	43	6/16 to 8/15	95	Seasonal			
Malm Gulch	Cattle	0	None	0	None			
Total		3,361		9,202		141		2,115

* One of the lower two pastures would be rested each year.
The upper pasture will be grazed after seed ripe each year.

Wildlife

Allotment	Elk Numbers	Season of Use	AUMs	Deer Numbers	Season of Use	AUMs	Antelope Numbers	Season of Use	AUMs	Bighorn Sheep Numbers	Season of Use	AUMs
Red Lake				450	Winter/Spring	496	70	Winter	38			
							30	Spr/Summer/Fall				
Herd Creek	10	Winter/Spring	38	500	Winter/Spring	552	20	Spr/Summer/Fall				
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150	Winter	78			
							58	Spr/Summer/Fall				
San Felipe/ Peck Canyon	140	Winter/Spring	271	175	Winter/Spring	239	570	Winter	349			
				(39)	Summer/Fall		333	Spr/Summer/Fall				
Warm Springs				200	Winter/Spring	221	210	Winter	219			
							315	Spr/Summer/Fall				
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1,130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1,102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120	Winter	47	25	Winter/Spring	25
							15	Spr/Summer/Fall				
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165			9			
Malm Gulch												
Total	317		561	5,624		6,166	1,160	Winter	818	220		227
							906	Spr/Summer/Fall				

TABLE 8-29

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 4

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	11.8	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	50	7	11.5	10	8600	None	None
Warm Springs	11	6	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	91.9	50	44.5	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

Total cost of projects estimated to be $630,145.00.

Range Improvements

Construction of range improvements would temporarily remove about 114 acres from production and permanently remove approximately 11 acres. Average recovery time would be approximately five years. In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-30).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetation cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

TABLE 8-30

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 4

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	91.9	1	.002	91.9	2
Water Developments						
Spring Developments	No.	50	.2	.2	10	10
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1		1,000	-
Total					23,498.9	12

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-31

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO WILDLIFE ALTERNATIVE

Allotment	Initial AUMS Under This Alternative	Future AUMs Available For Livestock
Red Lake	613	1,283
Herd Creek	1,411	1,411
Road Creek	346	805
Bruno Creek	85	198
Round Valley	438	690
San Felipe	2,868	6,652
Warm Springs	1,790	5,676
Garden Creek	600	1,166
Bald Mountain	296	450
Thompson Creek	51	64
Split Hoof	118	286
Squaw Creek	133	347
Spud Creek	179	371
Pine Creek	181	353
East Fork	0	430
Sullivan Creek	95	232
Malm Gulch	0	0
Total	9,202	20,369

TABLE 8-32

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE FOUR IS IMPLEMENTED (ACRES)

	Present				Minimum Constraints on Wildlife			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	7,850	5,705	6,099	*
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	4,179	7,131	2,170	*
Bruno Creek	494	537	76	1,271	711	396	0	*
Round Valley	6,010	3,978	2,596	919	8,642	1,346	2,596	*
San Felipe	3,370	32,272	39,267	6,407	20,246	27,901	26,762	*
Warm Springs	5,063	36,513	15,839	2,288	31,179	23,099	3,137	*
Garden Creek	699	16,726	8,988	4,045	6,108	12,177	8,128	*
Bald Mountain	327	5,977	7,507	8,726	983	5,999	6,829	*
Thompson Creek	276	2,119	785	2,415	407	2,057	716	*
Split Hoof	--	5,153	2,759	503	1,960	3,332	2,620	*
Squaw Creek	760	1,036	2,651	2,597	1,055	2,057	1,335	*
Spud Creek	307	3,568	2,797	2,184	1,985	1,921	2,766	*
Pine Creek	--	3,903	559	564	1,141	2,762	559	*
East Fork	61	4,861	4,384	2,404	1,391	4,808	3,107	*
Sullivan Creek	4	1,383	512	1,671	741	854	304	*
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	102,000	110,714	70,108	*

* Indicates no change from proposed action.

TABLE 8-33

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND
AFTER FIFTEEN YEARS IF ALTERNATIVE FOUR IS ADOPTED (AUMs)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON WILDLIFE			
	UP	DOWN	STATIC	ROCK/DOUG FIR /BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	7,816	-0-	11,838	*
Herd Creek	-0-	570	16,497	4,983	*	*	*	*
Road Creek	-0-	4,789	8,691	2,085	2,459	-0-	11,021	*
Bruno Creek	-0-	-0-	1,107	1,271	293	-0-	814	*
Round Valley	-0-	-0-	12,614	919	2,632	-0-	9,952	*
SanFelipe	3,960	24,500	46,449	6,407	32,341	-0-	42,568	*
Warm Springs	-0-	23,450	33,965	2,288	38,918	-0-	18,497	*
Garden Creek	-0-	6,970	19,443	4,045	6,269	-0-	20,144	*
Bald Mountain	3,670	2,630	7,511	8,726	5,004	-0-	8,807	*
Thompson Creek	2,020	520	640	2,415	2,220	-0-	960	*
Split Hoof	-0-	2,600	5,312	503	2,099	-0-	5,813	*
Squaw Creek	-0-	650	3,797	2,597	1,611	-0-	2,836	*
Spud Creek	620	-0-	6,052	2,184	2,329	-0-	4,343	*
Pine Creek	-0-	-0-	4,462	564	1,141	-0-	3,321	*
East Fork	2,520	-0-	6,786	2,404	5,128	-0-	4,178	*
Sullivan Creek	-0-	1,648	250	1,672	945	-0-	954	*
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	113,589	570	168,663	47,300

* Indicates no change from the proposed action.

Soils

Sediment Yield. Increased plant and litter cover from 15 years of this alternative would change sediment yield from about 1.32 (presently occurring unitwide) to an average .84 tons per acre, a reduction of approximately 36 percent per year. Total sediment yield for the Challis Unit under this alternative would be 278,000 tons.

Wildlife-Terrestrial

Minimum constraints on wildlife would decrease grazing by livestock and wild horses. The difference between this alternative and the proposed action is approximately 1,540 AUMs. This difference in AUMs would come from removing livestock AUMs from those riparian zones that would be fenced for the enhancement of fisheries habitat. Therefore, this alternative is expected to yield the same impacts to big game populations and habitat condition changes as presented in the proposed action. The exception would be in those riparian zones where fences would eliminate livestock and wild horse grazing. The vegetation in these areas would respond rapidly, providing increased forage and cover for nongame mammals and birds, as well as for big game occasionally using the area.

Beneficial and adverse impacts are discussed in Table 8-34. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 4-A, 4-B and 4-C.

TABLE 8-34

IMPACTS TO TERRESTRIAL WILDLIFE
MINIMUM CONSTRAINTS ON WILDLIFE
ALTERNATIVE 4

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action except in Horse Basin and Corral Basin non-game habitat would improve as well as species diversity. Fencing fish habitat would greatly improve non-game habitat in riparian zones.	Same as proposed action.	→
Turnout Dates	Very significant beneficial impacts would occur. All essential habitat requirements for spring habitat would be enhanced. The following habitat components would be enhanced: increased cover (resting and nesting), increased available forage and elimination of social interaction between livestock and non-game. Populations would be enhanced. Significant accelerated improvement of habitat condition on a long-term basis would occur due to lack of spring grazing by livestock and horses.	Eliminate competition for early green-up. Stress to pregnant and lactating does reduced. Increase significant spring habitat quality and quantity, long-term and short-term.	Eliminate current livestock/elk competition for forage and social interaction during spirng. Increase winter and spring carrying capacity. Decrease stress to pregnant and lactating cow elk and migrating elk recovering from winter stresses.
Grazing Systems	Vegetation response from grazing systems would be accelerated, consequently habitat condition would also be accelerated. Increased carrying capacity (spin off from no spring use) enhances grazing systems.	Same as proposed action except there would be no spring forage competition in the use pasture thus reducing stress to animals in the spring.	Beneficial impacts same as proposed action. Adverse impacts of use pasture eliminated in spring. Increased quality of spring habitat.
Ecological Condition Change	Refer to Grazing Systems (above).	Spring rest would accelerate upward trend on those areas expected to increase in condition. This would provide better spring habitat and increase carrying capacities on spring range.	→
Social Interaction	Spring social stress reduced or eliminated, especially those stresses associated with reproductive activities.	Decreased social stress on spring range overlap areas.	Elk would seldom, if ever, have to interact with livestock.

TABLE 8-34

IMPACTS TO TERRESTRIAL WILDLIFE
MINIMUM CONSTRAINTS ON WILDLIFE
ALTERNATIVE 4
(cont.)

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Use of Riparian Zones by Livestock and Horses	Impacts same as proposed action.	Same as proposed action except spring habitat quality would be enhanced by eliminating competition for spring forage.	→
Reduction in Wild Horses	Same as proposed action.	→	No impact.
Water Developments	Same as proposed action.	→	→
Fences	Riparian zones that are fenced would provide improved habitat, increasing wildlife diversity through increased food and cover.	Riparian zones that are fenced would provide improved resting and hiding cover and forage. Some fence related mortality would be expected.	Same as proposed action.
Brush Beating	Same as proposed action.	→	→
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	No impact.	No impact.
Land Development	Same as proposed action.	→	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 a/ Fair 97,309 Good 6,840	Poor -5,164 Fair 3,399 Good 1,765

a/ Much of the increased habitat condition is due to the recovery of winter killed sagebrush that occurred in 1976-1977.

TABLE 8-34

IMPACTS TO TERRESTRIAL WILDLIFE
MINIMUM CONSTRAINTS ON WILDLIFE
ALTERNATIVE 4
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Same as proposed action.	No grazing by livestock on any winter ranges would eliminate all forage competition. Carrying capacities increased. Potential population increases viable.	Same as proposed action.
Turnout Dates	Eliminate current livestock/antelope competition for early spring forage. Reduced stress to fawning and lactating does. Reduce stress to newborn. Spring habitat quality enhanced.	Elimination of livestock from sheep ranges eliminates any adverse impacts due to livestock (competition for forage, social stresses, etc.).	Very significant beneficial impacts would occur. Stress eliminated or reduced during reproduction and birth. Increased available forage for critical spring months.
Grazing Systems	Same as proposed action, except adverse impacts from early spring grazing would be eliminated.	No impact.	Same as proposed action except spring livestock use would be eliminated.
Ecological Condition Change	Spring rest would accelerate upward trend on those areas expected to increase in condition. This would provide better spring habitat and increase carrying capacities on spring range.	Habitat quality and quantity increased on areas previously utilized by livestock. Increased carrying capacity on bighorn range.	Spring rest would accelerate upward condition trends and increase habitat quality.
Social Interaction	Same as proposed action except impacts eliminated in the spring and also with livestock in Corral Basin and Horse Basin.	No impact.	Same as proposed action but absence of livestock/game bird interaction in spring significantly reduces adverse impacts.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except reduced somewhat in spring.	No impact.	Same as proposed action except adverse impacts eliminated from livestock use during spring.
Reduction in Wild Horses	Same as proposed action. Increased distribution of antelope and increased habitat quality and quantity in Horse Basin and Corral Basin.	No impact.	Same as proposed action.
Water Developments	Same as proposed action.	No impact.	Same as proposed action.
Fences	Same as proposed action.	No impact.	→
Brush Beating	Same as proposed action.	No impact.	Same as proposed action.
Burning	No impact.	Same as proposed action.	→
Plow and Seed	No impact.	→	→
Land Development	Same as proposed action.	→	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Winter: Poor -11,893; Fair 10,391; Good 1,502. Summer: Poor -66,703; Fair 66,703; Good No Change	Poor -969; Fair -283; Good 1,252	Specificity of information not available to determine impacts quantitatively.

Wildlife-Aquatic

Minimum constraints on wildlife would decrease unitwide grazing by livestock, and wild horses by 1,549 AUMs per year. The impacts of this alternative on aquatic habitat would be the same as in the proposed action, except where stream protection would be accomplished by excluding livestock and wild horses from riparian areas in the Herd and Road Creek watersheds.

In the Herd Creek watershed, significant improvements in fish habitat would result from fencing 4.0 miles of Lake Creek and 3.8 miles of Herd Creek on public land. Riparian vegetation recovery would increase total stream shading to about 80 percent in fenced areas. Stream siltation due to bank trampling and bank instability would decrease substantially. These changes would improve fish spawning habitat and increase the carrying capacities of Herd and Lake Creeks for resident and anadromous fish.

Excellent habitat conditions would not result along all fenced stream sections on Herd Creek because stream siltation from private ranchers and upstream Forest Service lands would continue. Fish spawning and rearing habitat in Herd Creek would also be adversely impacted where livestock use of the streambanks would be concentrated at water gaps and cattle crossings. Habitat conditions on these short stream sections would deteriorate due to loss of streambank vegetation and localized increases in stream siltation. Overall, fish production would increase in Herd Creek despite off-site sources of silt and localized grazing impacts at stream access points.

Since Herd Lake acts as a sediment trap immediately above the proposed fencing project on Lake Creek, stream siltation would decrease dramatically in 4.0 miles of Lake Creek after livestock were excluded from the riparian area. Riparian vegetation and streambank stability would improve in the fenced area. Anadromous fish spawning and rearing habitat in the lower half-mile of Lake Creek would improve from good to excellent condition. 3.5 miles of resident trout habitat above this lower section would improve from "fair" to "good".

Fencing the Corral Basin and Horse Basin watersheds would reduce erosion in the Road Creek drainage (see soils section of this alternative). Downstream salmon and steelhead habitat in the East Fork River would improve as stream siltation decreased. Fourteen miles of resident trout habitat now in poor condition would improve to "fair" condition as streamside vegetation and stream stability increased following fencing. About 0.8 miles of trout habitat in "fair" condition would improve to good condition within 15 years.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to 141 animals would result in the same kinds of impacts as discussed in the proposed action. There would be 37.8 miles more fencing in this alternative which would increase the potential of wild horses injured or killed from entanglement with barbed wire.

The later turnout date for livestock, June 16 instead of May 1, would probably result in somewhat less utilization of forage by cattle on the wild horse winter range.

Livestock Grazing

Implementation of Alternative 4 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 4 season of use (Table 8-35) would cause 36 livestock operators to lose 45 days spring grazing, and one operator to lose 30 days spring grazing.

To compensate reduction in AUMs of spring grazing on public lands during May and early June, livestock operators would have to buy hay, lease pasture or reduce herd numbers.

TABLE 8-35

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 4, CHALLIS UNIT

Present Use		Alternative 4 Level of Use		Change Resulting From Alternative 4	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	9,202	3,361	-8,242	-4,339

If the forage (8,242 AUMs) identified in Table 8-35 were replaced by hay, it would require 3,681 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce herd size. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 4 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 4,339 cattle number in Table 8-35.

It is estimated that 20 percent of the livestock operators could adjust to a lower level of cattle use on the public land. These would be small operators that have taken partial non-use or total non-use in recent years.

If livestock operators reduced their herd size, they would graze fewer cattle on the national forest and lose a permit for the cattle not grazed. If operators were forced out of business, they would lose their total forest permit.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 11,167 AUMs that could be allocated to livestock at the time additional forage is determined available for grazing animals through the BLM planning system. For purposes of analysis, these 11,167 AUMs are considered for livestock use in the future.

Initial Stocking Rate	9,202 AUMs
Increased Production in 15 Years	11,167 AUMs
	20,369 AUMs

This would be 2,925 AUMs above the current eight-year average use.

Economics

Under this alternative the small operators would lose nine AUMs. This is the same as the proposed action and the impacts would be similar. Please refer to the Economics Section in Chapter 3.

Intermediate sized operations will lose an average of 103 AUMs. If they purchase hay, their feed costs will increase by $2,060 and their net income will decrease to $8,000. Reductions in herd size will reduce their net income to approximately $3,400.

Large operators will lose and average of 1,270 AUMs. Purchase of hay would increase feed costs by $25,400 and further reduce net losses to $19,376. Reductions in herd size would result in a net loss of approximately $80,000.

TABLE 8-36

COMPARISON OF LIVESTOCK INCOME
UNDER TWO MANAGEMENT STRATEGIES

RANCH SIZE	MEAN AUMs 8-YR AVERAGE	MEAN CHANGE FROM 8-YR AVERAGE USE	PERCENTAGE CHANGE FROM 8-YR AVERAGE	NET INCOME OR LOSS FROM PURCHASE OF HAY	NET INCOME OR LOSS FROM HERD CHANGE
Small	58	- 9	SAME AS PROPOSED ACTION		
Intermediate	234	- 103	44%	$ 8,000	$ 3,400
Large	2,509	-1,270	50.61%	$-19,376	$-80,000

Source: BLM Idaho State Office, 1978.

There would be a total loss for the 38 operators in the planning unit of $132,000 in livestock income. Approximately $40,000 in additional income would be lost. In 15 years under the maximum wildlife alternative, net ranch income would be $242.836 (based on 1977 costs and returns; andin 1977 dollars).

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

TABLE 8-37

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT
REDUCTIONS IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 13,042*
Sale of Yearlings	8,751*
Sale of Cull Cows and Bulls	4,553*
Other Receipts	--
Gross Returns	$ 26,346*
Expenses	
Land Rent	166
Feed	2,664*
Livestock Expenses	472*
Livestock Purchased	10,554
Insurance	1,098
Labor Expense	1,068
Taxes	1,017
Seed & Fertilizer	1,387*
Machinery Operating Expenses	3,311
Repairs	1,892
Utilities	1,046
Federal Grazing Fees	1,132*
Association Fees	48
Supplies	154*
Misc. Expenses	378*
Interest Expenses	4,274
Total Cash Expenses	$ 30,661*
Net Ranch Cash Income (Gross returns minus cash expenses)	(4,315)*
Change in Inventory	3,428*
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(887)*

*Adjusted for reduced herd size

TABLE 8-38

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT REDUCTIONS IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 83,125*
Sale of Yearlings	13,955*
Sale of Cull Cows and Bulls	19,786*
Other Receipts	10,394
Gross Returns	$127,260*
Expenses	
Land Rent	4,667
Feed	2,391*
Livestock Expenses	3,269*
Livestock Purchased	38,316
Insurance	11,955
Labor Expense	44,789
Taxes	12,770
Seed & Fertilizer	4,280*
Machinery Operating Expenses	13,014
Repairs	18,887
Utilities	12,708
Federal Grazing Fees	6,871*
Association Fees	292
Supplies	1,841*
Misc. Expenses	6,496*
Interest Expenses	47,332
Total Cash Expenses	$229,870*
Net Ranch Cash Income (Gross returns minus cash expenses)	(102,610)*
Change in Inventory	22,981
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(79,629)*

*Adjusted for reduced herd size

TABLE 8-39

ECONOMIC IMPACTS OF ALTERNATIVE 4
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	1	289	-99.66	282	-99.65	8.05
Baker, Richard	213	209	1	212	-99.53	208	-99.52	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.97
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	94	78	-45.35	25	-21.01	25.50
Carlisle, Lewis	539	228	163	376	-69.76	65	-28.51	35.88
Chivers, Garth	278	16	135	143	-51,44	-119	743.75	15.42
Cominotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	-7	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,020	2,522	-45.51	1,501	-33.20	24.83
Jan Mar Corp.	904	385	297	607	-67.15	88	-22.86	30.11
Keppner, Ray	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	-51	100.00	12.47
Leuzinger, George	65	41	36	29	-44.62	5	-12.20	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	109	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	-22	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	153	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	44	6	12.00	-19	76.00	13.80
San Felipe Ranch	8,375	7,396	2,868	5,507	-65.76	4,528	-61.22	23.26
Sherwood, Archie	55	45	37	18	-32.73	8	-17.78	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.63
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	-3	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	-102	212.50	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	241	311	-56.34	188	-43.32	25.27
Yates, Ralph	473	467	295	178	-37.63	172	-36.83	15.33
Totals	21,900	17,447	9,197	12,703		8,250		

Water

Water Use. Water consumption by livestock, wild horses, and wildlife under this alternative would be 4,305,480 gallons per year. This would be a decrease of 4,555,545 gallons per year below existing water consumption. The decrease is the result of reducing the numbers of grazing animals.

Streamflow. Alternative 4 would have an unmeasurable effect on streamflow. Impacts related to streamflows are the same as the proposed action.

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8-40

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 4

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Livestock	9,202 c/	300 d/	2,760,600
Wild Horses	1,692 c/	360 d/	609,120
Deer a/	38,846 c/	15 e,f/	582,690
Antelope	3,926 c/	30 g/	117,780
Elk	951 c/	150 d/	142,650
Bighorn Sheep	1,544 c/	60 h,i/	92,640
			4,305,480 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 8-28
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days.

Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase, however, there is no data to predict what the increase would be.

There would be fewer wild horses to view in the unit, but sufficient numbers left to view if recreationists wished to view them.

If ranchers sell their private land to land developers and the land is subdivided into summer home property there would be an increase of recreational use in the area. There is no data to quantify this impact.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 4 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

Wilderness

Although the potential for establishing wilderness areas in the ES area is not presently known, impacts listed here would result if the proposed action was implemented in an area with wilderness potential. Such impacts to potential wilderness would result from the construction of fences, access roads, and water

developments. Impacts would be in the form of scars on the landscape due to construction activities. Visual impacts would result from the appearance of man-made features that would change the wilderness character of the area. These impacts would occur in the short term, but would be of long-term duration. However, if any area within the ES area is identified as having wilderness potential and is formally identified as a wilderness study area, implementation of any part of the proposed action in that area which would change its wildenress character would be deferred. If such an area was established as a wilderness area, the deferment would be permanent; if not, the proposed action would ultimately be completely implemented.

MINIMUM CONSTRAINTS ON WILD HORSES (ALTERNATIVE 5)

This alternative maximizes the wild horse resource within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-41. Range improvements and vegetation manipulation required to implement this alternative are shown in Table 8-42.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 340 head. They would fluctuate between 200 and 425. A gathering program would be required every four years in order to maintain the herd at the average level.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in maintaining the horse numbers within the ES area at about 340 head. An average of 4,890 AUMs would be allocated each year to wild horses. This is about 246 less horses than presently occupy the area. The present number of horses require about 8,790 AUMs of forage annually. Tables 8-44, 45 and 46 illustrate projected data for vegetation condition, trend, and availability of AUMs after 15 years under Alternative 5.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	78,316	+132
Fair	145,440	122,741	- 16
Poor	103,567	81,765	- 21
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	79,145	+519
Down	72,977	570	- 99
Static	197,055	203,107	+ 3
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Range Improvements

Construction of range improvements would temporarily remove about 53 acres from production and permanently remove approximately eight acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-43).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetation cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

TABLE 8-41

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (Cattle) Class	Numbers	Season of Use	AUMs	Specific Grazing System	Wild Horses Numbers	Season of Use	AUMs
Red Lake	Cattle	307	5/1 to 6/30	613	Seasonal	42	Season Long	630
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	160	5/1 to 6/30	320	Seasonal	34	Season Long	510
Bruno Creek	Cattle	19	5/16 to 9/30	85	Seasonal			
Round Valley	Cattle	219	5/1 to 6/30	438	Seasonal			
San Felipe/ Peck Canyon	Cattle	611	5/1 to 9/29	3,381	Rest-Rotation 3 Pasture	82	Season Long	1,230
Warm Springs	Cattle	684	5/1 to 12/15	1,994	Rest-Rotation 6 Pasture	152	Season Long	2,280
Garden Creek	Cattle	300	5/1 to 6/30	600	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	148	5/1 to 6/30	296	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	10	5/16 to 10/15	51	Deferred Rotation 3 Pasture*			
Split Hoof	Cattle	59	5/1 to 6/30	118	Seasonal	16	Season Long	240
Squaw Creek	Cattle	67	5/1 to 6/30	133	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	101	5/1 to 6/30	202	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	5/16 to 6/10 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	96	5/1 to 6/30	192	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	43	5/1 to 6/30	85	Seasonal			
Malm Gulch		0	None	0	No Grazing	14	Season Long	210
Total		3,619		10,100		340		5,100

*One of the lower two pastures is rested each year.
The upper pasture will be grazed after seed ripe each year.

Wildlife

Allotment	Elk Numbers	Season of Use	AUMs	Deer Numbers	Season of Use	AUMs	Antelope Numbers	Season of Use	AUMs	Bighorn Sheep Numbers	Season of Use	AUMs
Red Lake				450	Winter/Spring	496	70	Winter	38			
							30	Spr/Summer/Fall				
Herd Creek	20	Winter/Spring	38	500	Winter/Spring	552	20	Spr/Summer/Fall				
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150	Winter	78			
							58	Spr/Summer/Fall				
San Felipe/ Peck Canyon	140	Winter/Spring	271	175	Winter/Spring	239	570	Winter	349			
				(39)	Summer/Fall		333	Spr/Summer/Fall				
Warm Springs				200	Winter/Spring	221	210	Winter	219			
							315	Spr/Summer/Fall				
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1,130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1,102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120	Winter	47	25	Winter/Spring	25
							15	Spr/Summer/Fall				
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165			9			
Malm Gulch	0		0	0								
Total	317		561	5,624		6,166	1,160	Winter	818	220		227
							906	Spr/Summer/Fall				

TABLE 2-42

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 5

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		5	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	5	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	0	5	5.0	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	0	5	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	33.05	40	44.0	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

TABLE 8- 43

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 5

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	33.1	1	.002	33.1	.7
Water Developments						
Spring Developments	No.	40	.2	.2	8	8
Water Pipelines	Miles	44	.2	-	8.8	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,438	8.7

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-44

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO WILD HORSE ALTERNATIVE

Allotment	Initial AUMs Under This Alternative	Future AUMs Available For Livestock
Red Lake	613	937
Herd Creek	1,411	1,411
Road Creek	320	564
Bruno Creek	85	148
Round Valley	438	549
San Felipe	3,381	5,120
Warm Springs	1,994	3,906
Garden Creek	600	996
Bald Mountain	296	403
Thompson Creek	51	54
Split Hoof	118	190
Squaw Creek	133	287
Spud Creek	202	304
Pine Creek	181	317
East Fork	192	331
Sullivan Creek	85	232
Malm Gulch	0	0
Total	10,100	15,273

TABLE 8- 45

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE 5 IS ADOPTED (ACRES)

	Present				Minimum Constraints on Wild Horses			
Allotment	Good	Fair	Poor	Rock Douglas-Fir Burn	Good	Fair	Poor	Rock Douglas-Fir Burn
Red Lake	2,186	9,217	8,251	3,541	5,925	6,899	6,830	*
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	3,336	7,946	2,198	*
Bruno Creek	494	537	76	1,271	*	*	*	*
Round Valley	6,010	3,978	2,596	919	*	*	*	*
San Felipe	3,370	32,272	39,267	6,407	14,631	29,355	30,923	*
Warm Springs	5,063	36,513	15,839	2,288	19,759	28,965	8,691	*
Garden Creek	699	16,726	8,988	4,045	*	*	*	*
Bald Mountain	327	5,977	7,507	8,726	*	*	*	*
Thompson Creek	276	2,119	785	2,415	*	*	*	*
Split Hoof	--	5,153	2,759	503	994	4,229	2,689	*
Squaw Creek	760	1,036	2,651	2,597	*	*	*	*
Spud Creek	307	3,568	2,797	2,184	*	*	*	*
Pine Creek	--	3,903	559	564	*	*	*	*
East Fork	61	4,861	4,384	2,412	*	*	*	*
Sullivan Creek	4	1,383	512	1,671	*	*	*	*
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	78,316	122,741	81,765	47,300

* Indicates no change from the proposed action.

TABLE 8-46

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND
AFTER FIFTEEN YEARS IF ALTERNATIVE FIVE IS ADOPTED (ACRES)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON WILD HORSES			
	UP	DOWN	STATIC	ROCK/DOUG FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	5,160	-0-	14,494	*
Herd Creek	-0-	570	16,497	4,983	*	570	*	*
Road Creek	-0-	4,789	8,691	2,085	1,588	-0-	11,892	*
Bruno Creek	-0-	-0-	1,107	1,271	*	*	*	*
Round Valley	-0-	-0-	12,585	919	*	*	*	*
SanFelipe	3,960	24,500	46,448	6,407	23,564	-0-	51,344	*
Warm Springs	-0-	23,450	33,965	2,288	21,844	-0-	35,571	*
Garden Creek	-0-	6,970	19,443	4,045	*	*	*	*
Bald Mountain	3,670	2,630	7,511	8,726	*	*	*	*
Thompson Creek	2,020	520	640	2,415	*	*	*	*
Split Hoof	-0-	2,600	5,312	503	1,064	-0-	6,848	*
Squaw Creek	-0-	650	3,797	2,597	*	*	*	*
Spud Creek	620	-0-	6,052	2,184	*	*	*	*
Pine Creek	-0-	-0-	4,462	564	*	*	*	*
East Fork	2,520	-0-	6,786	2,404	*	*	*	*
Sullivan Creek	-0-	1,648	250	1,672	*	*	*	*
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	79,145	570	203,107	47,300

* Indicates no change from the proposed action.

Sediment Yield

With this alternative, as a result of increased plant and litter cover, sediment yield at the end of 15 years would change from about 1.32 tons/acre (presently occurring) to an average of .95 tons/acre or approximately 28 percent less per year. This would total approximately 315,000 tons of sediment yield annually for the Challis Unit under this alternative.

Wildlife-Terrestrial

The maximum wild horse alternative is not expected to significantly affect big game habitat condition or populations. The demand for forage would be met through the same allocation (7,435 non-competitive AUMs and 337 competitive AUMs) as presented for the proposed action. This would sufficiently cover the IDF&G management objectives.

Less horse use than presently occurs (286 less horses) would benefit big game by reducing the degree of horse/big game interaction in use overlap areas. Antelope and deer would be the species most benefited. The main benefit would come in habitat quality with the reduction of deer, antelope and wild horse social interaction.

This alternative would meet the long range population objectives of the IDF&G.

Beneficial and adverse impacts are discussed in Table 8-47. Predictions of wildlife replacement, losses and displacement, as a result of this alternative, can be determined using Appendix 4-A, 4-B and 4-C.

TABLE 8-47

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM HORSE USE
ALTERNATIVE 5

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action.	→	→
Turnout Dates	Same as proposed action.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Reduction in horse numbers could enhance habitat condition changes. Quality and quantity of habitat improved.	→	Same as proposed action.
Social Interaction	Same adverse impacts as the proposed action.	→	Would eliminate present conflicts where horses and elk presently interact.
Use of Riparian Zones by Livestock and Horses	Same as proposed action.	→	→
Reduction in Horse Numbers	Reduces stress, mortality, displacement, increased habitat condition, carrying capacity, diversity.	→	Same as social interaction and would enhance habitat quality and quantity. Increase carrying capacity.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action.	→	No impact.
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	→	No impact.
Land Development	No impact.	→	→
Net Results of Alternative (Acres of Habitat Changed)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 a/ Fair 97,309 Good 6,840	Poor -5,164 Fair 3,399 Good 1,765

a/ Much of the increased habitat condition is due to the recovery of winter killed sagebrush that occurred in 1976-1977.

TABLE 8-47

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM HORSE USE
ALTERNATIVE 5
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Reduction of cows and horses from antelope use areas would increase forage, enhance habitat quantity and carrying capacity.	Same as proposed action.	→
Turnout Dates	Same as proposed action.	Same as proposed action.	Same as proposed action.
Grazing Systems	Same as above.	Same as proposed action.	Same as above.
Ecological Change	Ecological condition changes would be accelerated due to decreased horse use and reduction of livestock. Increased carrying capacity for antelope.	Same as proposed action.	Ecological condition changes would be accelerated in areas where livestock and horses are decreased. Habitat quality improved in the areas. Otherwise, same as proposed action.
Social Interaction	Decreased adverse impact due to lesser numbers of cows and horses. Habitat quality increased.	Same as proposed action.	Same as proposed action except reduced where livestock and horses are reduced.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except reduced adverse impacts in areas where livestock and horses reduced.	Same as proposed action.	Same as above.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action except increased beneficial impacts where cows are reduced. Antelope would receive more forage from project.	No impact.	Same as proposed action except increased beneficial impacts where livestock grazing and horse use reduced.
Burning	Same as proposed action.	→	
Plow and Seed	No impact.	→	Same as proposed action.
Land Development	Same as proposed action.	→	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Winter: Poor -11,893; Fair 10,391; Good 1,502 — Summer: Poor -66,703; Fair 66,703; Good No Change	Poor -969; Fair -283; Good 1,252	Specificity of information not available to determine impacts quantitatively.

Wildlife-Aquatic

The impacts of minimum constraints on wild horses on aquatic habitat would be the same as in the proposed action. The level of grazing by all animals would not be of a magnitude that would cause different impacts on aquatic habitat.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to 340 animals would stock the wild horse range at the maximum level of the winter range within the area. It is expected the wild horses would stay dispersed approximately as they presently are, the only change would be fewer bands of horses.

Protecting Malm Gulch Allotment (9,136 acres) and Sand Hollow watershed (3,905 acres) from wild horses would reduce the total area available to them. This would probably be significant at the 340-head level of wild horses because it creates a situation where wild horses would increase the area in which they are in competition for forage with cattle.

Both cattle and horses primarily subsist on grasses. A study on diet similarities between wild horses and cattle was made by Dr. Richard Hansen of Colorado State University in the Challis wild horse area and the findings were as follows:

Cattle (grazing season long) Horse Spring	68.0%
Cattle (grazing season long) Horse Summer	65.3%
Cattle (grazing season long) Horse Fall	61.4%

Habitat overlap between wild horses, wildlife and cattle is keenest around water, in wet meadow areas and other overlap areas where animals tend to concentrate.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would cause the same kinds of impacts as the proposed action. It is impossible to quantify the difference in intensity of impact but the lesser numbers of cattle grazing the wild horse area would somewhat reduce competition for forage.

Livestock Grazing

Implementation of Alternative 5 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 5 season of use (Table 8-48) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, three would no longer be allowed fall grazing, and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 8-48

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 5, CHALLIS UNIT

Present Use		Alternative 5 Level of Use		Change Resulting From Alternative 5	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	10,100	3,619	-7,344	-4,081

If the forage (7,344 AUMs) identified in Table 8-48 were replaced by hay, it would require 2,938 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 5 because of the difference in capability of each operator to adjust their livestock operation. The change would probably be something less than the 4,081 cattle number in Table 8-48.

It is estimated that 20 percent of the livestock operators could adjust to a lower level of cattle use on the public land. These would be small operators that have taken partial non-use or total non-use in recent years.

If livestock operators reduce their herd size, they would graze fewer cattle on the national forest and lose a permit for the cattle not grazed. If operators were forced out of business, they would lose their total forest permit.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range.

This would amount to 5,623 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 5,623 AUMs are considered for livestock use in the future.

Initial stocking rate	10,100 AUMs
Increased production after 15 years	5,623 AUMs
Total	15,723 AUMs

This would be 90 percent of the current eight-year average use.

Economics

Under this alternative the small operators would lose an average of 10 AUMs. This would increase their feed costs by $200 and bring their net loss to $758. Most likely these ranchers will purchase hay.

Intermediate ranchers will lose, on the average, 92 AUMs. Their feed costs would increase by $1,840 if they were to buy hay and their net income would fall to $5,903. By reducing his herd size each intermediate operator would lose approximately 46 cattle and his net income would drop to $4,195.

The large operators would lose 1,126 AUMs, on the average, under this alternative. If the ranchers were to purchase hay, their feed costs would increase by $22,520 and their operations would have a $16,500 net loss. Reductions in herd size would increase their net loss even more--$70,000 on the average.

TABLE 8-49

COMPARISON OF LIVESTOCK INCOME
UNDER TWO MANAGEMENT STRATEGIES

RANCH SIZE	MEAN AUMs 8-YR AVERAGE	MEAN CHANGE FROM 8-YR AVERAGE USE	PERCENTAGE CHANGE FROM 8-YR AVERAGE	NET INCOME OR LOSS FROM PURCHASE OF HAY	NET INCOME OR LOSS FROM HERD CHANGE
Small	58	10	17.24%	$ -758	
Intermediate	234	92	39.32%	$ 5,903	$ 4,195
Large	2,509	1,126	44.88%	$16,500	$70,000

Source: BLM Idaho State Office, 1978.

Under Alternative 5 total livestock income for 38 operators in the Challis Unit would drop by $120,000. Additional income losses would be approximately $37,000. In 15 years under the maximum wild horse alternative, net ranch income would be $165,413 (based on 1977 costs and returns; and in 1977 dollars).

TABLE 8-50

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT REDUCTIONS IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 91,928*
Sale of Yearlings	15,433*
Sale of Cull Cows and Bulls	21,882*
Other Receipts	10,394
Gross Returns	$139,637*
Expenses	
Land Rent	4,667
Feed	2,644*
Livestock Expenses	3,615*
Livestock Purchased	38,316
Insurance	11,955
Labor Expense	44,789
Taxes	12,770
Seed & Fertilizer	4,733*
Machinery Operating Expenses	13,014
Repairs	18,887
Utilities	12,708
Federal Grazing Fees	7,598*
Association Fees	292
Supplies	2,305*
Misc. Expenses	7,183*
Interest Expenses	47,332
Total Cash Expenses	$232,538*
Net Ranch Cash Income (Gross returns minus cash expenses)	(92,901)*
Change in Inventory	22,981
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(69,920)*

*Adjusted for reduced herd size
Source: BLM State Office, Idaho 1978

TABLE 8-51

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT
REDUCTIONS IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 13,537*
Sale of Yearlings	9,083*
Sale of Cull Cows and Bulls	4,726*
Other Receipts	--
Gross Returns	$ 27,346*
Expenses	
Land Rent	166
Feed	2,765*
Livestock Expenses	489*
Livestock Purchased	10,554
Insurance	1,098
Labor Expense	1,068
Taxes	1,017
Seed & Fertilizer	1,440*
Machinery Operating Expenses	3,311
Repairs	1,892
Utilities	1,046
Federal Grazing Fees	1,175*
Association Fees	48
Supplies	159*
Misc. Expenses	393*
Interest Expenses	4,274
Total Cash Expenses	$ 30,895*
Net Ranch Cash Income (Gross returns minus cash expenses)	(3,548)*
Change in Inventory	7,743
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	4,195

*Adjusted for reduced herd size

TABLE 8-52

ECONOMIC IMPACTS OF ALTERNATIVE 5
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	111	179	-61.72	172	-60.78	8.05
Baker, Richard	213	209	81	132	-61.97	128	-61.24	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.07
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	87	85	-49.42	32	-26.89	25.50
Carlisle, Lewis	539	228	163	376	-69.76	65	-28.51	35.88
Chivers, Garth	278	16	135	143	-51.44	-119	743.75	15.42
Cominotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	-7	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,229	2,313	-41.74	1,292	-28.58	24.83
Jan Mar Corp.	904	385	297	607	-67.15	88	-22.86	30.11
Keppner, Ray	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	-51	100.00	12.47
Leuzinger, George	65	41	33	32	-49.23	8	-19.51	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	109	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	-22	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	40	10	-20.00	-15	60.00	13.80
San Felipe Ranch	8,375	7,396	3,381	4,994	-59,63	4,015	-54.29	23.26
Sherwood, Archie	55	45	42	13	-23.64	3	-6.67	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.68
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	-3	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	-102	212.50	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	257	295	-53.44	172	-40.09	25.27
Yates, Ralph	473	467	279	194	-41.01	188	-40.26	15.33
Totals	21,900	17,447	10,100	11,800		7.347		

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Use. Water consumption by grazing animals is estimated to be 5,544,360 gallons per year under this alternative. A decrease in use by 3,316,665 gallons per year is expected from the present level of water consumption described in Chapter 2. A reduction in grazing animals is responsible for the decrease in water consumption.

Streamflow. This alternative would have an unmeasurable effect on stream flow; see the proposed action for the impacts related to streamflow.

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8-53

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 5

Animal	Animal Months/Year b/	Gallons Animal/Month	Total Gallons per Year
Livestock	10,100 c/	300 d/	3,030,000
Wild Horses	4,080 c/	360 d/	1,468,800
Deer a/	38,846 c/	15 e,f/	582,690
Antelope	3,926 c/	30 g/	117,780
Elk	1,683 c/	150 d/	252,450
Bighorn Sheep	1,544 c/	60 h,i/	92,640
			5,544,360 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 8-41
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days. Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase, however, there is no data to predict what the increase would be.

There would be fewer wild horses to view in the unit, but sufficient numbers left to view if recreationists wished to view them.

If ranchers sell their private land to land developers and the land is subdivided into summer home property there would be an increase of recreational use in the area. There is no data to quantify this impact.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 5 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

Wilderness

Although the potential for establishing wilderness areas in the ES area is not presently known, impacts listed here would result if the proposed action was implemented in an area with wilderness potential. Such impacts to potential wilderness would result from the construction of fences, access roads, and water developments. Impacts would be in the form of scars on the landscape due to construction activities. Visual impacts would result from the appearance of man-made features that would change the wilderness character of the area. These impacts would occur in the short term, but would be of long-term duration. However, if any area within the ES area is identified as having wilderness potential and is formally identified as a wilderness study area, implementation of any part of the proposed action in that area which would change its wildenress character would be deferred. If such an area was established as a wilderness area, the deferment would be permanent; if not, the proposed action would ultimately be completely implemented.

REDUCED LEVEL OF GRAZING OF LIVESTOCK AND WILD HORSES (ALTERNATIVE 6)

This alternative represents a different possible multiple use mix option as developed in the Step 2 MFP process. The use levels for this alternative are shown in Table 8-55. Range improvements and manipulation required to implement this alternative are shown in Table 8-56.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

The wild horse herd would be controlled at an average level of 80 head. They would fluctuate between 75 and 100. A gathering program would be required every year in order to maintain the herd at the average level.

A total of 24.9 miles of stream would be fenced to protect anadromous fish habitat. These are the same streams that would be fenced under the minimum constraint in the wildlife alternative. As under the wildlife alternative, livestock grazing would be eliminated from the crucial bighorn sheep winter ranges and from the elk crucial winter range in the San Felipe/Peck Canyon Allotment.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the allocation of 7,128 AUMs to livestock and 1,200 AUMs to wild horses. This represents a 59 percent reduction in livestock use and an 86 percent reduction in wild horse use when compared to the present situation. Wildlife use would remain at the same level as described in the proposed action. The reduced level of grazing in this alternative would have the following beneficial impacts to desirable vegetation species:

1. Increased vigor
2. Increased seed production
3. Increased seedling establishment
4. Increased litter accumulation

Those allotments with rest rotation or deferred grazing systems would respond with accelerated beneficial impacts. The

reduced stocking rates coupled with a systematic spring rest or deferral of spring use would result in more rapid favorable response by vegetation. Those allotments with seasonal grazing would respond favorably but at a slower rate.

Tables 8-57 58 and 59 illustrate the projected data for vegetation condition, trend, and availability of AUMs after 15 years under Alternative 6.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	101,409	+200
Fair	145,440	109,478	- 25
Poor	103,567	71,935	- 31
Rock, Doug. Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	112,099	+776
Down	72,977	570	- 99
Static	197,055	170,153	- 14
Rock, Doug. Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

TABLE 8-54

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (Cattle) Class	Numbers	Season of Use	AUMs	Specific Grazing System	Wild Horses Numbers	Season of Use	AUMs
Red Lake	Cattle	256	5/1 to 6/30	511	Seasonal	11	Season Long	165
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	112	5/1 to 6/30	224	Seasonal	8	Season Long	120
Bruno Creek	Cattle	12	5/16 to 9/30	55	Seasonal			
Round Valley	Cattle	124	5/1 to 6/30	247	Seasonal			
San Felipe/ Peck Canyon	Cattle	350	5/1 to 9/29	1,938	Rest-Rotation 3 Pasture	12	Season Long	180
Warm Springs	Cattle	579	5/1 to 12/15	1,688	Rest-Rotation 5 Pasture	45	Season Long	675
Garden Creek	Cattle	168	5/1 to 6/30	336	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	45	5/1 to 6/30	90	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	4	5/16 to 10/15	19	Deferred Rotation 3 Pasture			
Split Hoof	Cattle	44	5/1 to 6/30	88	Seasonal	4	Season Long	60
Squaw Creek	Cattle	55	5/1 to 6/30	110	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	47	5/1 to 6/30	94	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	83	5/11 to 6/10 10/1 to 10/16	116	Seasonal			
East Fork	Cattle	55	5/1 to 6/30	110	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	45	5/1 to 6/30	91	Seasonal			
Malm Gulch		0		0	No Grazing			
Total		2,645		7,128		80		1,200

Wildlife

Allotment	Elk Numbers	Elk Season of Use	Elk AUMs	Deer Numbers	Deer Season of Use	Deer AUMs	Antelope Numbers	Antelope Season of Use	Antelope AUMs	Bighorn Sheep Numbers	Bighorn Sheep Season of Use	Bighorn Sheep AUMs
Red Lake				450	Winter/Spring	496	70	Winter	38			
							30	Spr/Summer/Fall				
Herd Creek	10	Winter/Spring	38	500	Winter/Spring	552	20	Spr/Summer/Fall	9			
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150	Winter	78			
							58	Spr/Summer/Fall				
San Felipe/ Peck Canyon	140	Winter/Spring	271	175	Winter/Spring	239	570	Winter	349			
				(39)	Summer/Fall		333	Spr/Summer/Fall				
Warm Springs				200	Winter/Spring	221	210	Winter	219			
							315	Spr/Summer/Fall				
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120	Winter	47	25	Winter/Spring	25
							15	Spr/Summer/Fall				
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165						
Malm Gulch												
Total	317		561	5,624		6,166	1,160	Winter	818	220		227
							906	Spr/Summer/Fall				

TABLE 8-55

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 6

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	54.1	51	44.5	31	21,075	1,310	1,000

Range Improvements

Construction of range improvements would temporarily remove about 76 acres from production and permanently remove approximately ten acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-56).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetation cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

TABLE 8-56

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 6

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	54.1	1	.002	54.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-57

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE REDUCED LEVEL OF GRAZING ALTERNATIVE

Allotment	Initial AUMs Under This Alternative	Future AUMs Available For Livestock
Red Lake	511	1,233
Herd Creek	1,411	1,411
Road Creek	224	810
Bruno Creek	55	213
Round Valley	247	808
San Felipe	1,938	7,163
Warm Springs	1,688	5,354
Garden Creek	336	1,166
Bald Mountain	90	459
Thompson Creek	19	65
Split Hoof	88	285
Squaw Creek	110	299
Spud Creek	94	461
Pine Creek	116	360
East Fork	110	398
Sullivan Creek	91	144
Malm Gulch	0	0
Total	7,128	20,629

TABLE 8-58

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE 6 IS ADOPTED (ACRES)

	Present				Reduced Level of Grazing			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/ Burn
Red Lake	2,186	9,217	8,251	3,541	7,580	5,876	6,198	3,541
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	4,983
Road Creek	1,800	9,430	2,250	2,085	4,781	6,550	2,149	2,085
Bruno Creek	494	537	76	1,271	793	314	0	1,271
Round Valley	6,010	3,978	2,596	919	9,924	64	2,596	919
San Felipe	3,370	32,272	39,267	6,407	21,328	27,621	25,960	6,407
Warm Springs	5,063	36,513	15,839	2,288	27,018	25,257	5,140	2,288
Garden Creek	699	16,726	8,988	4,045	6,107	12,177	8,129	4,045
Bald Mountain	329	5,977	7,507	8,726	1,032	5,954	6,825	8,726
Thompson Creek	276	2,119	785	2,415	409	2,056	715	2,415
Split Hoof	-	5,153	2,759	503	1,779	3,500	2,633	503
Squaw Creek	760	1,036	2,651	2,597	1,009	1,893	1,545	2,597
Spud Creek	307	3,568	2,797	2,184	3,493	441	2,738	2,184
Pine Creek	-	3,903	559	564	1,170	2,733	559	564
East Fork	61	4,861	4,384	2,404	1,102	4,819	3,385	2,404
Sullivan Creek	4	1,383	512	1,671	462	1,054	383	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	692
Totals	33,815	145,440	103,567	47,300	101,409	109,478	71,935	47,300

* Indicates no change from the proposed action.

TABLE 8-59

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF ALTERNATIVE SIX IS ADOPTED (ACRES)

ALLOTMENT	PRESENT				REDUCED LEVEL OF GRAZING			
	UP	DOWN	STATIC	ROCK/DOUG FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	7,447	-0-	12,207	3,541
Herd Creek	-0-	570	16,497	4,983	*	570	*	4,983
Road Creek	-0-	4,789	8,691	2,085	3,082	-0-	10,398	2,085
Bruno Creek	-0-	-0-	1,107	1,271	404	-0-	703	1,271
Round Valley	-0-	-0-	12,614	919	3,914	-0-	8,671	919
SanFelipe	3,960	24,500	46,449	6,407	35,224	-0-	39,684	6,407
Warm Springs	-0-	23,450	33,965	2,288	32,654	-0-	24,761	2,288
Garden Creek	-0-	6,970	19,443	4,045	6,267	-0-	20,146	4,045
Bald Mountain	3,670	2,630	7,511	8,726	5,057	-0-	8,754	8,726
Thompson Creek	2,020	520	640	2,415	2,223	-0-	957	2,415
Split Hoof	-0-	2,600	5,312	503	1,905	-0-	6,007	503
Squaw Creek	-0-	650	3,797	2,597	1,355	-0-	3,092	2,597
Spud Creek	620	-0-	6,052	2,184	3,865	-0-	2,807	2,184
Pine Creek	-0-	-0-	4,462	564	1,170	-0-	3,292	564
East Fork	2,520	-0-	6,786	2,404	4,560	-0-	4,746	2,404
Sullivan Creek	-0-	1,648	250	1,672	587	-0-	1,311	1,672
Malm Gulch	-0-	1,020	7,425	691	*	*	*	691
Totals	12,790	72,977	197,055	47,300	112,099	570	170,153	47,300

* Indicates no change from proposed action.

Sediment Yield

As a result of increased vegetation and litter cover from 15 years under this alternative, sediment yield would change from about 1.32 tons/acre to an average of .73 tons/acre in the unit. This would be approximately a 45 percent reduction. Total sediment yield would be 240,000 tons annually for the Challis Unit.

Wildlife-Terrestrial

The reduced level of grazing alternatives is expected to produce similar impacts to wildlife as the maximized wildlife alternative. Big game would be allocated the same number of AUMs as the proposed action, maximized wildlife alternative and maximized wild horse alternative.

Significantly less numbers of wild horses would reduce social conflicts with antelope and deer.

The IDF&G 15 year objectives would be met. If in the future the IDF&G desires to increase population objectives, the habitat condition would be such that increased carrying capacities would be available.

Beneficial and adverse impacts are discussed in Table 8-60. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 4-A, 4-B and 4-C.

TABLE 8-60

IMPACTS TO TERRESTRIAL WILDLIFE
SIGNIFICANTLY LESS COW AND HORSE GRAZING
ALTERNATIVE 6

DISCRETE MANAGEMENT ACTION	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action except reduction in wild horse and livestock forage consumption would leave more food and cover (resting, nesting and thermal cover) for non-game. Habitat quality and quantity increased. Carrying capacity and diversity decreased.	Same as proposed action except more spring forage would be available on areas unsuitable to livestock. Since suitability criteria is different than proposed action. Reduced competition on spring ranges. Increased carrying capacities.	Same as proposed action except impacts from competition for spring and winter forage would be reduced, especially on suitable areas. Habitat quality as well as carrying capacities would increase.
Turnout Dates	Same as proposed action except adverse impacts lessened due to reduced levels of livestock grazing.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Accelerated rates of improved condition would provide more food and cover. Quality and quantity of habitat would increase, especially on suitable areas. Carrying capacity and diversity would increase.	→	Accelerated rates of improved vegetation condition on suitable areas will enhance habitat by increasing forage. Carrying capacity would improve.
Social Interaction	Adverse impacts would be the same as the proposed action but decreased due to reduced cow and horse numbers and nonuse of unsuitable areas.	Social interaction with horses decreased. Reduced stress to deer. Frequency of interaction with livestock also reduced.	Same as proposed action.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except habitat improvement in riparian zones would be improved where fences are built to keep out livestock and horses.	→	Same as proposed action but adverse impacts decreased.
Reduction in Horse Numbers	Significantly reduce social and physical interaction as well as associated stress, habitat improved. Increased carrying capacity and diversity.	Significantly reduce chance of social interaction. Increase quality of deer habitat.	Would eliminate all or most adverse impacts associated with horses.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action.	→	No impact.
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	→	No impact.
Land Development	No impact.	Same as proposed action.	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Specificity of information not available to determine impacts quantitatively.	Poor -104,149 a/ Fair 97,309 Good 6,840	Poor -5,164 Fair 3,399 Good 1,765

a/ Much of the increased habitat condition is due to the recovery of winter killed sagebrush that occurred in 1976-1977.

TABLE 8-60

IMPACTS TO TERRESTRIAL WILDLIFE
SIGNIFICANTLY LESS COW AND HORSE GRAZING
ALTERNATIVE 6
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Reduce forage competition between cows, horses and antelope on spring and summer range. Increased habitat condition and carrying capacities.	Same as proposed action but somewhat lessened adverse impacts due to reduced livestock numbers.	Same as proposed action but beneficial impacts greater.
Turnout Dates	Same as proposed action except adverse impacts lessened.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Accelerated rates of improved vegetation on spring-summer range would increase forage, especially on areas suitable for livestock. Improved habitat quality and quantity. Reduce stress to pregnant and lactating does. Increased carrying capacity.	Areas presently in poor condition and suitable to livestock would increase a condition class. Forage for bighorn would increase. Increased habitat quality and quantity as well as carrying capacity.	Increased forb/grass components of habitat will increase habitat quality.
Social Interaction	Same as proposed action but lessened.	→	→

TABLE 8-60

IMPACTS TO TERRESTRIAL WILDLIFE
SIGNIFICANTLY LESS COW AND HORSE GRAZING
ALTERNATIVE 6
(cont.)

DISCRETE MANAGEMENT ACTION	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Use of Riparian Zones by Livestock and Horses	Same as proposed action.	→	Riparian habitats used by upland game, where fenced, would be enhanced. This would increase food and cover for birds. Habitat quality, especially as related to brood rearing, would increase.
Reduction in Horse Numbers	Reduction of horses would reduce social interaction and competition for forage. Increased habitat quality.	No impact.	Same as proposed action.
Water Developments	Same as proposed action.	No impact.	Same as proposed action.
Fences	Proposed fences on Road Creek would cause some immediate mortality until antelope adjust to fence and locate water gaps. Impacts would be short-term.	Same as proposed action.	Same as riparian zones.
Brush Beating	Same as proposed action.	No impact.	Same as proposed action.
Burning	Same as proposed action.	→	→
Plow and Seed	No impact.	→	→
Land Development	Same as proposed action.	→	No impact.
Net Results of Alternative (Acres of Habitat Changed)	Winter Poor -11,893 Fair 10,391 Good 1,502 Summer Poor -66,703 Fair 66,703 Good No Change	Poor -969 Fair -283 Good 1,252	Specificity of information not available to determine impacts quantitatively.

Wildlife-Aquatic

A reduction in the level of grazing by large ungulates of 4,538 AUMs per year would not significantly improve aquatic habitat in the unit except where riparian areas would be fenced to exclude livestock and wild horse grazing.

The impacts of this alternative on Herd and Lake Creeks would be the same as those resulting from implementation of Alternative 4 (Minimum Constraints on Wildlife).

In the Road Creek drainage, fencing projects and reduced wild horse and livestock grazing would improve 14.8 miles of fish producing streams. Erosion in the drainage would decrease (see soils section of this alternative), benefiting downstream anadromous fish habitat in the East Fork River. A total of 14 miles of resident trout habitat in the Road Creek watershed would improve from "poor" to "fair" condition. Also, as streamside vegetation and stream stability increased following fencing, 0.8 miles of Road Creek trout habitat would improve from "fair" to "good" condition.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 80 animals would result in some dispersing of bands of horses. This could lead to significant breeding problems. Kirkpatric (1978) indicates that in the Pryon Mountain Wild Horse Area, a herd of 75 animals is the minimum number for breeding a healthy, viable herd. At the stocking level of 80 wild horses, this minimum level is being approached.

Protecting Malm Gulch and Sand Hollow watershed from wild horse grazing would have no impact to the herd at the 80 wild horse level.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would have the same kinds of impacts as in the proposed action. It is impossible to quantify the difference in intensity of impact, but the lower level of stocking of wild horses and cattle would reduce the impact.

Livestock Grazing

Implementation of Alternative 6 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 6 season of use (Table 8-61) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no

longer be allowed summer grazing, three would no longer be allowed fall grazing, and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 8-61

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 6, CHALLIS UNIT

Present Use		Alternative 6 Level of Use		Change Resulting From Alternative 6	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	7,158	2,660	-10,286	-5,040

If the forage (10,286 AUMs) identified in Table 8-61 were replaced by hay, it would require 4,114 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 6 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 5,040 cattle numbers in Table 8-61.

It is estimated that 20 percent of the livestock operators could adjust to a lower level of cattle use on the public land. These would be small operators that have taken partial non-use or total non-use in recent years.

If livestock operators reduce their herd size, they would graze fewer cattle on the national forest and lose a permit for the cattle not grazed. If operators were forced out of business, they would lose their total forest permit.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 13,501 AUMs that could be allocated to livestock. At the time additional forage is determined available

for grazing use an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 13,501 AUMs are considered for livestock use in the future.

Initial stocking rate	7,128 AUMs
Increased production after 15 years	13,501 AUMs
Total	20,629 AUMs

This would be 3,185 AUMs more than the present eight-year average use.

Economics

Under Alternative 6 small ranchers would lose an average of 23 AUMs. Purchasing hay would increase feed costs by $460 and increase net loss to $1,018. Reductions in herd size will increase net loss to $1,461.

Intermediate operators would lose 144 AUMs, on the average, necessitating a $2,880 increase in feed costs, if they opted to buy hay. This would reduce their net income to $7,183. If these operators decided to reduce their herd size, they would lose 72 cattle and their net income would fall to $877.

Large operators would lose and average of 1,498 AUMs. If they decided to buy hay their feed costs would increase by $29,960 and their net loss would increase to $23,936. If they decided to reduce their herds, they would lose, on the average, 749 cattle. Their net loss would increase to $95,000.

TABLE 8-62

COMPARISON OF LIVESTOCK INCOME
UNDER TWO MANAGEMENT STRATEGIES

RANCH SIZE	MEAN AUMs 8-YR AVERAGE	MEAN CHANGE FROM 8-YR AVERAGE USE	PERCENTAGE CHANGE FROM 8-YR AVERAGE	NET INCOME OR LOSS FROM PURCHASE OF HAY	NET INCOME OR LOSS FROM HERD CHANGE
Small	58	23	39.66	$- 1,018	$- 1,461
Intermediate	234	144	61.54	$ 7,183	$ 877
Large	2,509	1,498	59.71	$-23,936	$-95,000

Source: BLM Idaho State Office, 1978.

Approximately $175,000 of the total livestock income of 38 operators would be lost to the community under this alternative. This would result in approximately $53,000 in additional income being lost. In 15 years under the reduced grazing alternative net ranch income would be $247,169 (based on 1977 costs and returns; and in 1977 dollars).

TABLE 8-63

AVERAGE COSTS AND RETURNS FOR THREE SMALL CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT REDUCTION IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 4,246*
Sale of Yearlings	--
Sale of Cull Cows and Bulls	2,090*
Other Receipts	825
Gross Returns	7,161*
Expenses	
Land Rent	500
Feed	1,199*
Livestock Expenses	120*
Livestock Purchased	567
Insurance	250
Labor Expense	--
Taxes	662
Seed & Fertilizer	305*
Machinery Operating Expenses	850
Repairs	433
Utilities	623
Federal Grazing Fees	471*
Association Fees	--
Supplies	187*
Misc. Expenses	361*
Interest Expenses	2,828
Total Cash Expenses	$ 9,356*
Net Ranch Cash Income (Gross returns minus cash expenses)	(2,195)*
Change in Inventory	734
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(1.461)

*Adjusted for reduced herd size

TABLE 8-64

AVERAGE COSTS AND RETURNS FOR THREE INTERMEDIATE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT
REDUCTION IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 11,391*
Sale of Yearlings	7,643*
Sale of Cull Cows and Bulls	3,977*
Other Receipts	--
Gross Returns	$ 23,011*
Expenses	
Land Rent	166
Feed	2,327*
Livestock Expenses	412*
Livestock Purchased	10,554
Insurance	1,098
Labor Expense	1,068
Taxes	1,017
Seed & Fertilizer	1,212*
Machinery Operating Expenses	3,311
Repairs	1,892
Utilities	1,046
Federal Grazing Fees	988*
Association Fees	48
Supplies	134*
Misc. Expenses	330*
Interest Expenses	4,274
Total Cash Expenses	$ 29,877*
Net Ranch Cash Income (Gross returns minus cash expenses)	(6,866)*
Change in Inventory	7,743
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	877*

*Adjusted for reduced herd size
Source: BLM Idaho State Office, 1978

TABLE 8-65

AVERAGE COSTS AND RETURNS FOR THREE LARGE CATTLE OPERATIONS IN THE CHALLIS PLANNING UNIT REDUCTION IN HERD SIZE

	Average Per Ranch
Returns	
Sale of Calves	$ 69,190*
Sale of Yearlings	11,615*
Sale of Cull Cows and Bulls	16,470*
Other Receipts	10,394
Gross Returns	$107,669*
Expenses	
Land Rent	4,667
Feed	1,990*
Livestock Expenses	2,720*
Livestock Purchased	38,316
Insurance	11,995
Labor Expense	44,789
Taxes	12,770
Seed & Fertilizer	3,561*
Machinery Operating Expenses	13,014
Repairs	18,887
Utilities	12,708
Federal Grazing Fees	5,719*
Association Fees	292
Supplies	1,533*
Misc. Expenses	5,407*
Interest Expenses	47,332
Total Cash Expenses	$225,660*
Net Ranch Cash Income (Gross returns minus cash expenses)	(117,991)*
Change in Inventory	22,981
Net Ranch Income (Net ranch cash income plus, or minus, change in inventory and ranch perquisites)	(95,010)*

*Adjusted for reduced herd size
Source: BLM Idaho State Office, 1978

TABLE 8-66
ECONOMIC IMPACTS OF ALTERNATIVE 6
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	63	227	-78.28	220	-77.74	8.05
Baker, Richard	213	209	46	167	-78.40	163	-77.99	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	116	242	-67.60	230	-66.47	27.07
Bradshaw, Eugene	57	56	48	9	-15.79	8	-14.29	15.73
Bradshaw, Kenneth	172	119	61	111	-64.53	58	-48.74	25.50
Carlisle, Lewis	539	228	50	489	-90.72	178	-78.07	35.88
Chivers, Garth	278	16	91	187	-67.27	-75	468.75	15.42
Cominotti, Fabio	264	246	55	209	-79.17	191	-77.64	11.45
Corrigan, Dick	88	78	27	61	-69.32	51	-65.38	14.97
Cutler, Howard	180	148	52	128	-71.11	96	-64.86	11.52
Ennis, Mrs. James L	134	127	55	79	-58.96	72	-56.69	31.72
Hammond, John	183	147	37	146	-79.78	110	-74.83	12.69
Hammond, Robert	38	17	13	25	-65.79	4	-23.53	12.57
Hanson, Margaret	465	383	102	363	-78.06	281	-73.37	15.99
Helm, Calvin	104	39	32	72	-69.23	7	-17.95	7.86
Horning, Tim	24	9	5	19	-79.17	4	-44.44	24.39
Ingram, Will	5,542	4,521	2,903	2,639	-47.62	1,618	-35.79	24.83
Jan Mar Corp.	904	385	183	721	-79.76	202	-52.47	30.11
Keppner, Ray	230	199	46	184	-80.00	153	-76.88	7.66
Laverty, Ray	141	1	43	98	-69.50	-42	100.00	12.47
Leuzinger, George	65	41	23	42	-64.62	18	-43.90	7.72
Leuzinger, Jake & Son	186	145	17	169	-90.86	128	-88.28	20.61
Maraffio, Frank	300	226	101	199	-66.33	125	-55.31	14.27
Peck, Joseph	262	72	53	209	-79.77	19	-26.39	39.55
Pedrini Brothers	181	181	116	65	-35.91	65	-35.91	11.58
Philps, Ethel	155	136	31	124	-80.00	105	-77.21	3.78
Piva Brothers	413	337	126	287	-69.49	211	-62.61	4.92
Pleus, Herman	50	25	42	8	-16.00	-17	68.00	13.80
San Felipe Ranch	8,375	7,396	1,938	6,437	-76.86	5,458	-73.80	23.26
Sherwood, Archie	55	45	20	35	-63.64	25	-55.56	11.34
Smith, Kenneth	55	36	11	44	-80.00	25	-69.44	14.68
Stark, Kenneth	15	9	3	12	-80.00	6	-66.67	4.14
Stevens, Robert	29	7	6	23	-79.31	1	-14.29	4.01
Westgard, Gean	240	48	84	156	-65.00	-36	75.00	7.99
Westgard, Golden	155	155	55	100	-64.52	100	-64.52	3.23
Wooley, Dan	552	429	147	405	-73.37	282	-65.73	25.27
Yates, Ralph	473	467	219	254	-53.70	248	-53.10	15.33
Totals	21,900	17,447	7,155	14,745		10,292		

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Use. Water consumption by grazing animals proposed for this alternative would consume 3,477,780 gallons per year. This would result in a decrease of 5,383,245 gallons per year below water consumed by grazing animals presently occupying the Challis Planning Unit.

Streamflow. An unmeasurable effect to streamflow would result from implementing this alternative. See Proposed Action.

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8-67

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 6

Animal	Animal Months/Year b/	Gallons per Animal/Month	Total Gallons per Year
Livestock	7,128 c/	300 d/	2,138,400
Wild Horses	960 c/	360 d/	345,600
Deer a/	38,846 c/	15 e,f/	582,690
Antelope	3,926 c/	30 g/	117,780
Elk	1,683 c/	150 d/	252,450
Bighorn Sheep	681 c/	60 h,i/	40,860
			3,477,780 gallons/year

a/ 135 lbs. average wt., Anderson (1978)
b/ Refers to the number of months each species occupies the area, e.g., if 50 elk are present for six months, the total animal months per year would be 300.
c/ Table 8-54
d/ Stoddart and Smith (1955)
e/ Dasmann (1971)
f/ Nichol (1938)
g/ Taylor (1975)
h/ Crow (1964)
i/ Groves (1961)

Recreation

Additional hunter days (big game hunting) could result from the four percent increase in big game numbers (301 animals). Improved habitat for upland game could result in more game, especially sage grouse. This could also result in more hunter days. Improved habitat for all species of game fish would result in more fish available to recreationists.

As a result of these beneficial effects on habitat and increased numbers of game and fish resulting from the proposed action, hunter days and fisherman days could increase, however, there is no data to predict what the increase would be.

There would be fewer wild horses to view in the unit. Recreationists would have to make a real effort to view wild horses with numbers at the level of this alternative.

If ranchers sell their private land to land developers and the land is subdivided into summer home property there would be an increase of recreational use in the area. There is no data to quantify this impact.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 6 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

Wilderness

Although the potential for establishing wilderness areas in the ES area is not presently known, impacts listed here would result if the proposed action was implemented in an area with wilderness potential. Such impacts to potential wilderness would result from the construction of fences, access roads, and water developments. Impacts would be in the form of scars on the landscape due to construction activities. Visual impacts would result from the appearance of man-made features that would change the wilderness character of the area. These impacts would occur in the short term, but would be of long-term duration. However, if any area within the ES area is identified as having wilderness potential and is formally identified as a wilderness study area, implementation of any part of the proposed action in that area which would change its wildenress character would be deferred. If such an area was established as a wilderness area, the deferment would be permanent; if not, the proposed action would ultimately be completely implemented.

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	1 No Action	2 No Grazing	3 Minimum Constraints Livestock	4 Minimum Constraints Wildlife	5 Minimum Constraints Wild Horse	6 Reduced Grazing Level
Vegetation Condition (Acres)								
Good	33,815	88,260	36,200	126,642	74,052	102,000	78,316	101,409
Fair	145,440	117,786	117,381	90,484	116,281	110,714	122,741	109.478
Poor	103,567	76,716	129,241	65,696	92,489	70,108	81,765	71,935
Rock, Douglas Fir and Burn	47,300	47,300	47,300	47,300	47,300	47,300	47,300	47,300
Total	330,122	330,122	330,122	330,122	330,122	330,122	330,122	330,122
Trend in Condition (Acres)								
Up	12,790	94,144	12,790	149,303	64,725	113,589	79,145	112,099
Down	72,977	570	72,977	570	1,137	570	570	570
Static	197,055	188,618	197,055	132,949	216,960	168,663	203,107	170,153
Rock, Douglas Fir and Burn	47,300	47,300	47,300	47,300	47,300	47,300	47,300	47,300
Total	330,122	330,122	330,122	330,122	330,122	330,122	330,122	330,122
Soil (Sediment Yield)	1.3 tons/acre 436,628 tons	.87 tons/acre 288,087 tons	1.45 tons/acre 480,000 tons	.49 tons/acre 162,000 tons	.87 tons/acre 288,000 tons	.84 tons/acre 278,000 tons	.95 tons/acre 315,000 tons	.73 tons/acre 240,000 tons
Wildlife-Terrestrial Populations								
Deer	5,252	5,624 c/	5,624 a/	5,624 b/	4,636 d/	5,624 c/	5,624 c/	5,624 c/
Elk	267	317 c/	317 a/	317 b/	264 d/	317 c/	317 c/	317 c/
Antelope	W 910- S 613	W 1,160- S 906 c/	W 1,160- S 906 a/	W 1,160- S 906 b/	W 1,089 d/ S 803 d/	W 1,160- S 906 c/	W 1,160- S 906 c/	W 1,160- S 906 c/
Bighorn	87	220	163 a/	220 b/	220 d/	220 c/	220 c/	220 c/

a/ Population levels presented and IDFG population objectives would be achieved in 15 years but forage conditions would not maintain them. Annual population fluctuations would be expected including high and low extremes.

b/ Available forage could support population levels above the present IDFG objectives, if desired.

c/ Allocated forage could support and maintain population levels presented.

d/ The Wildlife populations presented in this alternative are a reflection of the methodology used for allocating forage to grazing animals. As a result, the figures relected here would not allow enough forage to meet IDFG big game population levels. For additional explanation review the narrative on Page 4-2 and table 8-35.

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	1 No Action	2 No Grazing	3 Minimum Constraints Livestock	4 Minimum Constraints Wildlife	5 Minimum Constraints Wild Horse	6 Reduced Grazing Level
Wildlife-Terrestrial Habitat Condition Changes in Acres								
Deer a/								
Poor	128,797	-104,149	-104,149	-104,149	-104,149	-104,149	-104,149	-104,149
Fair	8,897	97,309	97,309	97,309	97,309	97,309	97,309	97,309
Good	12,401	6,840	6,840	6,840	6,840	6,840	6,840	6,840
Elk								
Poor	6,750	-5,164	-149	-5,164	-5,164	-5,164	-5,164	-5,164
Fair	24,549	3,399	-1,177	3,399	3,399	3,399	3,399	3,399
Good	2,975	1,765	1,326	1,765	1,765	1,765	1,765	1,765
Antelope (Winter)								
Poor	12,631	-11,893	-11,893	-11,893	-11,893	-11,893	-11,893	-11,893
Fair	1,880	10,391	10,391	10,391	10,391	10,391	10,391	10,391
Good	6,266	1,502	1,502	1,502	1,502	1,502	1,502	1,502
Antelope (Summer)								
Poor	71,488	-66,703	-66,703	-66,703	-66,703	-66,703	-66,703	-66,703
Fair	98,294	66,703	66,703	66,703	66,703	66,703	66,703	66,703
Good	8,937	No Change	No Change	No Change	No Change	No Change	No Change	No Change
Bighorn Sheep								
Poor	5,077	-969	-101	-969	-969	-969	-969	-969
Fair	10,364	-283	-312	-283	-283	-283	-283	-283
Good	557	1,252	412	1,252	1,252	1,252	1,252	1,252

a/ Much of the increased habitat condition is due to the projected recovery of winter kill on sagebrush that occurred in 1976-1977.

Predicted acres of habitat change were based on the following criteria: condition classification (Appendix 4F), vegetation changes that would significantly affect key forage requirements, significance of big game use area in relation to total ES area, degree of livestock or wild horse adjustments, and length of time for habitat to significantly respond to each alternative action.

No acreage change in habitat condition from one alternative to the next does not necessarily mean the absence of on-the-ground conditions or trend changes. In most cases, the changes would just not be significant enough to determine the number of acres affected.

One must also keep in mind that the allocation of forage and the amount of food available is only one of the environmental factors determining habitat conditions. Therefore, manipulations of competitive forage users (livestock and wild horses) may not significantly change habitat conditions.

Antelope habitat stays constant because their use areas are on some of the most unproductive soils in the Challis ES areas. It is felt that the vegetation in habitat response of these areas would be the same under significant livestock reductions, and no grazing. Acreages of improvement shown are due mostly to the recovery of winter killed sagebrush.

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	1 No Action	2 No Grazing	3 Minimum Constraints Livestock	4 Minimum Constraints Wildlife	5 Minimum Constraints Wild Horse	6 Reduced Grazing Level
Wildlife-Aquatic								
Miles of Habitat by Condition Class								
Anadromous and Resident Fish:								
Poor	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Fair	12.05	11.30	12.05	10.05	12.05	10.85	11.30	10.85
Good	26.15	26.40	26.15	25.70	26.15	24.35	26.40	24.35
Excellent	4.80	5.30	4.80	7.25	4.80	7.80	5.30	7.80
Resident Fish:								
Poor	18.6	18.6	19.4	-0-	18.6	4.6	18.6	4.6
Fair	19.8	17.8	19.0	21.6	19.8	29.5	17.8	29.5
Good	1.9	3.9	1.9	18.7	1.9	6.2	3.9	6.2

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	1 No Action	2 No Grazing	3 Minimum Constraints Livestock	4 Minimum Constraints Wildlife	5 Minimum Constraints Wild Horse	6 Reduced Grazing Level
Wild Horse	586	162	586	None	91	141	340	80
Livestock Grazing								
Initial Stocking Rate (AUMs)	17,444	10,436	17,444	None	12,456	9,202	10,100	7,128
Forage Available for Livestock After 15 Years, AUMs (No Grazing Alternative-Not Available to Livestock)		17,369	7,193	24,190	15,172	20,369	15,723	20,629
Change in Production		+6,933	-7,251	+13,754	+2,716	+11,167	+5,623	+13,501
Economic								
Annual Net Income ($) Challis Unit (Short-Term) if Ranchers Reduce Herd Size	190,000	70,000	About the Same As Present Situation	0	120,000	68,000	70,000	15,000
Annual Net Income ($) Long Term 1/ (15 years)		192,847	23,264	0	156,230	242,836	165,413	279,169

1/ In 1977 dollars. All costs and returns held equal to 1977. Developed by correlating AUMs and annual net income.

Social								
Ranching way of life	Highly valued seen as dependent on Federal actions	Locally seen as threatened. Strong desire to maintain status quo.	About the same as present situation	Most ranchers would leave livestock industry. Community character would be less cohesive	In short term slightly less threatening than proposed action	In short term slightly more threatening than proposed action	About the same as "proposed action"	More threatening than proposed action
Land Use Decisions	Demand for scenic property to develop for residential recreational use	Some operators would reluctonly sell property for development	Ongoing trends would continue. more slowly than with proposed action	Residential development, recreational use would accelerate, population growth increase	Less rapidly than with proposed action	About the same as "proposed action"	About the same as "proposed action"	About the same as "proposed action"
Attitudes	Ranchers viewed locally as community mainstay	Disaffected from government	Relief that proposed action not implemented	Intense local resentment of government	About the same as "proposed action"	About the same as "proposed action"	About the same as "proposed action"	About the same as "proposed action" more intence

Chapter 9

Consultation and Coordination

TEAM ORGANIZATION

The Challis Supplemental Environmental Statement (ES) Team was organized on June 19, 1978, at the Idaho State Office Annex in Boise, Idaho. The team consisted of specialists in soils, water resources, vegetation, wildlife, wild horses, fisheries, livestock, grazing, cultural resources and socio-economics.

CONSULTATION AND COORDINATION IN PREPARATION OF THE PROPOSED ACTION

Consultations at a working level with Departmental and BLM Washington Office personnel with special expertise were used to formulate the proposed action. In addition, informal, local level contacts were made with various governmental agencies, organizations and individuals. These contacts included telephone calls, personal interviews, informational meetings, field trips and workshops. Subjects most often discussed included range inventory and suitability studies, soils inventory, proposed grazing systems, forage allocation, wildlife and fisheries problems and the time frame within which the draft supplement must be published. Those participating in consultations prior to the draft include:

Custer County Economic Stabilization Committee
Idaho Society for Protection of Mustangs and Burros
National Resources Defense Council
American Humane Association
Idaho Department of Fish and Game
University of Idaho
Livestock Industry Representatives
Livestock operators and other interested individuals

A major effort was made to acquire public input to the development of the proposed action in a resource workshop held June 6 through June 9, 1978. Representatives at the workshop were as follows:

2 Representatives of livestock interest
2 Representatives of Custer County Econ. Stabilization Committee
2 Representatives from Idaho Fish and Game
1 Representative from NRDC
1 Representative from the Idaho Env. Council
1 Representative of Eastern Horse Protection Groups
1 Representative of Western Horse Humane Groups

Views and comments on proposed levels of resource use were discussed and utilized in the planning effort that resulted in development of the proposed action.

CONSULTATION AND COORDINATION IN PREPARATION OF THE DRAFT ENVIRONMENTAL STATEMENT

A news release was distributed August 24, 1978. A public announcement of intent to prepare the supplemental statement was distributed to news media throughout the State of Idaho. The purpose of the release was to obtain public input for preparation of the ES.

Contact was made with the US Fish and Wildlife Service in compliance with Section 7 of the Endangered Species Act of 1973. These letters are included in this section.

PUBLIC COMMENTS AND RESPONSES

Public Comment Period

The public comment period was scheduled to provide the public the opportunity to review and then offer comment on the effects of the proposed action and its alternatives.

The draft ES was issued August 17, 1978. The notice of availability was published in the August 16, 1978, issue of the Federal Register on page 36334. The notice also announced a 45-day public review period ending October 2, 1978, and included a schedule of formal public hearings on the draft ES to be held at two locations. After publication of the notice of availability, copies of the draft ES were mailed to federal, state and local government agencies and nongovernment organizations, such as conservation groups for their review and comments.

Approximately 1,000 copies of the draft ES were distributed. Reading copies were made available for public review at the following locations: 68 state and district offices of the Bureau of Land Management in Alaska, Arizona, California, Colorado, Idaho, Montana, Utah, Nevada, New Mexico, Oregon, Washington and Wyoming; the Eastern States Office and the Washington, D.C. Office. In addition to the Federal Register notice, a national news release was made from the Department of the Interior,

Washington, D.C. on August 18, 1978. A similar news release was made, on August 17, 1978, from the Idaho State Office, Bureau of Land Management, to 75 newspapers, 39 radio stations, 16 TV stations, two news services and about 24 special interest groups within the State of Idaho.

Public Hearings

The Department of the Interior conducted two days of formal public hearings on the adequacy of the Draft Challis ES on September 6 and 7, 1978. An Interior Department Attorney Advisor presided over the hearings which were recorded verbatim by professional court reporters. Copies of the full hearings' transcripts were made available for public review in Bureau of Land Management Offices in Boise, Idaho. The hearings panel consisted of employees from the Bureau of Land Management including the Idaho State Director; Team Leader, Environmental Impact Statement Project Staff (Idaho State Office); and the District Manager, Salmon District. The hearings were widely announced as indicated in the public comments period section.

The following summarizes the hearing locations, dates, attendance and number of people who gave testimony:

PUBLIC HEARINGS

Location	Date and Time	Attendance	Number Testifying
Challis, Idaho	September 6, 1978	44	14
Boise, Idaho	September 7, 1978	27	8

Handling and Review Procedures for Public Comments

Due to wide public awareness, the Idaho State Director, Bureau of Land Management, received many comments on the draft environmental statement. Oral testimony was received at formal hearings; written comments were received from federal and state agencies, private organizations and individuals. The participating ranchers also submitted comments.

All written coments and the hearing transcripts have been sent with the final environmental statement to the Secretary of the Interior and Environmental Protection Agency and will also be available for public inspection at the State Director's Office, Bureau of Land Management, Federal Building, Boise, Idaho; BLM District Office, Salmon, Idaho; and BLM Office of Public Affairs, Washington, D.C.

Each person who testified at the hearings at Challis and Boise and person, organization, or agency that provided written or oral comments were assigned an index number.

Comment Letters Received

Index Number	Agency, Organization or Individual
1	Idaho Cattle Feeder's Association, Incorporated
2	Advisory Council on Historic Reservations
3	Trout Unlimited
4	State of Idaho Department of Lands
5	Ardella Nelson
6	Bud L. Nelson
7	Larry Nelson
8	National Park Service
9	East-Central Idaho Planning and Development Association, Incorporated
10	State of New Mexico
11	Heritage Conservation and Recreation Service
12	Joe Caywood
13	Bureau of Mines
14	Bill Maxwell
15	Betty and Dick Baker
16	U.S. Environmental Protection Agency, Region Ten
17	Bureau of Reclamation, Pacific Northwest Region
18	Ellen Hansen
19	Dan Woolley
20	Peggy and Archie Sherwood
21	Gary and Jackie Ingram
22	Idaho Archaeological Society, Incorporated
23	Doyle Leuzinger
24	Mr. and Mrs. Will Ingram
25	Garth Chivers
26	Mr. and Mrs. William Elliott
27	Fish and Wildlife Service
28	Idaho Farm Bureau Federation
29	State of Idaho Division of Budget, Policy Planning and Coordination (State Clearing House)
30	Frank and Betty Maraffio
31	Oregon Environmental Council
32	Natural Resources Defense Council, Incorporated

Individuals Testifying at Hearings (who did not submit letters)

Index Number	Speaker	Representing	Location
33	Tom Chivers	Self	Challis
34	Lawrence Bradbury	Self	Challis
35	Mike Feld	Senator James A. McClure	Challis
36	Forest J. Severe	Congressman George Hansen	Challis
37	Clyde Rigby	Custer County Commissioners	Challis
38	Francis Smith	Custer County Zoning Board	Challis
39	Golden Westergard	Self	Challis
40	Grant Daniels	Self	Challis
41	Vearl Crystal	State Senator	Challis
42	Wayne E. Tibbitts	State Representative	Challis
43	William Meiners	Ada County Fish & Game League	Boise
44	Frank Ludburg	Idaho Governor's Office	Boise
45	Allen Saylor	Idaho Cattleman's Association	Boise
46	Gordon Tate	Idaho State Grange	Boise
47	Dr. Lee Sharp	Self	Boise
48	Glen Balch	Self	Boise
49	Lou Logisch	Self	Boise

RESPONSES TO COMMENTS

All comments were reviewed and considered. Comments which presented new data, questioned facts and/or analyses, or raised questions or issues bearing directly upon the environmental effects of the proposed action and its alternative were used in revising the text or were responded to separately. These comments, oral and written, were grouped by environmental element, i.e.: wildlife, vegetation, etc. The person who raised the comment is identified by index number by each comment. Similar comments received from more than one source have several index numbers identifying the commenters.

A number of commenters raised questions concerning the use of and applicability of the Bureau's suitability criteria. The following is an explanation of the suitability criteria in response to these numerous comments:

> Suitability classification of rangelands for livestock grazing is the consideration of the capability of forage producing land to be grazed on a sustained yield basis, under an attainable management system, without damage to the basic resources of the area or to adjacent

areas. Suitable range should not be confused with "usable" range. Many areas can be grazed by livestock and are therefore usable, but may not be suitable for grazing on a long-term basis because of the resulting damage to the area or adjacent areas.

The classification of a particular rangeland area as unsuitable does not necessarily mean that area will not receive livestock use, but rather that the available forage on the unsuitable area should not be allocated to livestock use. Allocation of the forage produced on rangelands classified as unsuitable will generally result in over obligation and abuse of adjacent suitable rangelands. For example, before livestock will significantly utilize the forage on slopes greater than 50 percent or areas further than 4 miles from water, more suitable rangeland within the area will normally be used heavily and repeatedly. The over obligation of available forage through credits of forage from unsuitable rangelands has contributed greatly to range deterioration, and damage to other resources.

The following criteria was used for determining which areas are suitable for livestock grazing.

1. All areas with slopes 0-20 percent where the distance from water is less than four miles.

2. All areas with slopes between 21-30 percent where the distance from reliable water is 0.6 miles or less.

3. All areas with slopes between 31-40 percent where the distance from reliable water is 0.4 miles or less.

4. All areas with slopes between 41-50 percent where the distance from reliable water is 0.3 miles or less.

5. All areas with slopes between 0-50 percent where water can be developed from a known source either on or off-site and within the distance criteria in 1 through 4 above.

6. Forty percent of the forage on areas with slopes between 0-50 percent that have no known on-site water source, but where water could be developed using present technology.

Vegetation

Commenter No. 4

1. Comment: The discussion on page 2-1, on Range Condition Class ratings based on the current state of ecological plant succession is

misleading to most laymen. The ratings of "excellent, good, fair and poor" do not equate to palatability, production or utility, but apply strictly to a specific state of vegetative composition. Ecologists, especially foresters, range managers and wildlife biologists, have long recognized that stages of ecological plant succession well below the climax level may be most desirable for livestock and wildlife.

Response: All references to condition in this document are based on ecological condition as outlined in Chapter 2 of the supplement. It is recognized that there may be a difference between ecological condition and range condition as it relates to value for livestock grazing. For this reason, the proposed management would retain the ecological condition at some successional stage below climax conditions. Ecological condition under climax situations would be rated excellent. The grazing management being proposed would not improve any grazing lands to an excellent ecological condition class. The proposed management would hold the ecological condition in a fair to good class in most instances. This situation usually provides a desirable situation for grazing and ecological interests.

Commenter No. 9

2. Comment: Pages 3-18, 3-20 and 3-21 speak of the negative impact which residential development could have on big game populations. Although the Bureau of Land Management admits that recreational subdivisions will have an effect on wildlife and water quality and thus on recreation, no mention is made of ameliorative tactics to reduce this negative impact. Possibly the control of impacts would require cooperation and coordination with other federal and state agencies; however, this issue needs to be addressed.

Response: BLM does not have any control on whom land owners sell their lands to or over local zoning laws pertaining to subdivisions.

3. Comment: How soon will range conditions change under the new management program. Page 1-9 indicates 5 to 15 years while Page 3-15 implies 3 to 6 years.

Response: The rate of improvement would vary from one allotment to another depending upon the relationship between the system and the capabilities of the site to respond to improved management. A fifteen year projection was selected as the time it would take to reach management objectives.

4. Comment: Page 1-9 says that 50 percent of forage vegetation must remain unused to protect plant vigor and soil, yet page A-11 says the yearlong amount that can be removed is 25 to 30 percent; which limit will

be used? Does this variation come from the rest rotation system or will 33 percent more grazing reduction be required by later AMPs to implement rest rotation using three (3) pastures.

Response: The 50 percent is the minimum that must be left to protect plants and soil because of the quantity of range in fair and poor condition. If the use was to take place in the fall or winter, 50 percent would remain unused. However, use during the spring or summer is more harmful to the vegetation than fall or winter use (see Appendix 2-D). Thus, only 30 or 40 percent of the production would be harvested at these times, respectively (with respect to grass plants). This variation in no way results from the implementation of a grazing system. The grazing systems would be designed not to exceed 50 percent utilization of forage species.

5. Comment: Page 3-11 says Herd Creek Allotment range condition will still downtrend after management. Why is this? Present range conditions are improving by local judgement. This allotment is being used to study the effect of rest rotation grazing on wildlife by Professor Peek from the University of Idaho.

Response: Present studies show that there is a livestock concentration area in which the trend is still downward in spite of the rest rotation system. Since this system has been going for three years, this trend was projected to continue. Future studies may show that this is not the case. The decision was made to stock the Herd Creek Allotment at present levels so that the work of Dr. Peak may continue and the effect of rest rotation grazing may be properly analyzed.

6. Comment: As noted on Page 2-1, why were climax species chosen as the measure of quality of the vegetation? Often times climax growth is not as palatable to wildlife as transitational growth. If there is any data available to the Bureau of Land Management to show that climax growth would be most suitable to that wildlife occurring naturally, this should be included in the Environmental Statement.

Response: Ecological vegetation condition is based on the percentage of climax vegetation within an existing stand. It is recognized that climax vegetation may not be the most desirable condition for watershed protection, wildlife habitat or livestock grazing. For this reason, the proposed action retains most of the vegetation in fair or good ecological condition. It is felt that the needs of watershed, wildlife and livestock can best be met within a fair to good ecological condition rating. The proposed action would maintain very little rangeland in an excellent condition class.

Commenter No. 28

7. Comment: At this time I would like to note an interesting paradox that stands out in the discussion on the effects of grazing on vegetation.

It is stated in this alternative that the following adverse impacts would occur on vegetation:

1. Decreased vigor
2. Decreased seed production
3. Decreased seedling establishment
4. Decreased litter accumulation

Yet it is a known phenomenon (and stated on page 3-3 of Chapter 3) that proper grazing actually increases vigor and quality of the vegetation and increses seedling establishment. Also seed production is not adversely affected and litter accumulation is satisfactory under proper grazing management.

Thus it is hard for me to understand how one action can have two completely opposite effects at the same time (also refer to Table 3-2, page 3-5 of Chapter 3).

Response: Text revised and net impacts to vegetation is now defined.

Commenter No. 32

8. Comment: BLM claims that vegetative types are used to stratify each condition class and that "Acreages were tabulated for the various ecological sites, condition class and current vegetation types within a condition class" (page A-11). The material presented in Chapter 2 does not demonstrate this, however, and this should be corrected in the final version.

Response: Ecological sites and vegetation types are synonymous in this document. The ecological site descriptions are included in the appendix of the final. Acreage tabulations for vegetation types (ecological sites) and ecological condition were presented in the draft document.

9. Comment: The draft supplement states that "Compilation of the inventory data involved portraying on maps the soil survey, ecological sites and ecological condition class" (page A-10). This information should be presented in the final version of the supplement.

Response: The draft document presented a soils map, vegetation type map (ecological sites) and a range (ecological condition) map. In this document the vegetative types are synonymous with ecological sites.

10. Comment: Additional problems exist in the presentation of the vegetative data, per se, and the determination of animal unit months. A discrepancy exists between the names used in Table 2-1 (page 2-3) and those used in Table 2-2 (page 2-4) and Table 2-12 (page 2-22). In all events, it is impossible to correlate these names and the descriptions of associated species and/or soils to the Ecological Site Guides utilized in the conduct of resource inventories.

Response: The vegetation type names correspond with the ecological site names in the final statement. Ecological site descriptions are included in the appendix. The site descriptions explain the soils/vegetation relationships. Methodology for calculating AUMs is also included in the appendix of the final statement.

Commenter No. 43

11. Comment: Briefly, some of these concerns can be enumerated as follows: Why when the BLM has a basic data of soil, range sites and condition class survey, do they not present said data in the subject document to portray the data base, its correlation and its role in the subsequent decision-making process?

Response: Ecological site descriptions were prepared during the soil/vegetation inventory. The name of these sites correspond with the vegetation types discussed in the draft supplement. The site descriptions are now included in the appendix of the final supplement. These descriptions identify soils/vegetation relationships and discuss site potentials and capabilities as they relate to soils and precipitation.

12. Comment: How and where is this correlated to basic resource data of soil and range sites, herbage production, usable forage and animal unit month determinations?

Response: The soils/vegetation correlations were made at the time the ecological sites were identified. Productive capabilities were established for each site in good, fair and poor condition through actual vegetation clippings. Detailed vegetation clipping lists were prepared for each site so that specific vegetation composition was known for each site. Since production was determined by species it was possible to allocate forage to grazing ungulates based on known use factors for the animals. It was also possible to determine whether or not the proposed allocations were within the productive capabilities of a site or group of sites.

13. Comment: Why were vegetative types, which by inference represent current vegetative cover to mask both soil vegetation relationships and potential productivity, used to attempt portraying range condition, apparent trend productivity and so forth?

Response: Soils/vegetation relationships are now included in the ecological site descriptions and presented in the appendix to the final supplement. These descriptions were used as the basis for determining trend and condition because they were prepared after actual clipping of the sites and a determination was made as to where the specific site was in relationship to climax conditions. Potential productivity of the site was also determined at this point in time because a reference site in good condition was located and clipped to determine productivity of that site in good condition. The vegetation types and ecological sites are synonymous in this document.

Soil

Commenter No. 3

1. Comment: To make impact projections meaningful, sediment predictions should be presented on a stream specific basis. Additionally, it would be necessary for ramifications of the deviation on Public Law 92-500 (Federal Water Pollution Act) requirements to be addressed. Also, implications of the deviation will have to be evaluated in terms of compliance with Executive Order 11990.

Response: Predictions on sediment yield are not precise on such a large land area and further breakdown into smaller areas would compound inaccuracies because of few samples per acre. The variables are hard to measure accurately in the kinds of inventories employed. The monitoring system identified in Chapter 1 (on vegetation response and water quality) would identify proper or improper management of individual stream watersheds over time. If further management treatment was needed, it would then be employed.

Commenter No. 4

2. Comment: The siltation data relative to livestock grazing is grossly exaggerated. Considerable research has been done, much of it in Idaho, on the Reynolds Creek Experimental Watershed as well as in other areas that discounts the contribution of livestock grazing to increased sedimentation on a watershed, particularly in a grazing management system.

Response: The method used in determining sediment yield has been added to the appendix (3-B). This method provided a means of computing sediment yield under various levels of grazing. The major variable used was change in percent vegetation cover as a result of various grazing levels. There are various ways to arrive at these estimates; however, it was considered desirable to utilize an accepted method that is described

in the BLM manual. The method used did indicate significant improvement in sediment yield under grazing management.

Commenter No. 29

3. Comment: The Road Creek drainage contributes large quantities of sediment due to the state of watershed and the effects of excessive livestock use on the streambanks. The proposed action includes only reduction of livestock use; the pattern and period of use is unchanged in the Road Creek Allotment. I assume the studies described on 1-19 are designed to evaluate the rest rotation systems in the allotments at the head of the drainage. It states that the studies would "provide a basis for changing management of livestock if objectives for water quality and fish habitat are not met." I cannot find any objectives for either water quality or fish habitat.

Response: The objectives for water quality and fish habitat are identified in the Challis Unit MFP. Only objectives relating directly to grazing management are listed in this document.

4. Comment: In Table 8-68, page 8-109, the seidment yield for wildlife maximized alternative is only 60 pounds per acre less than the livestock maximized alternative. Since there is a substantial change in vegetation condition between these alternatives, I question the seidment yield estimates.

Response: The determining factor for so many acres changing in condition (better condition) under the wildlife maximized alternative is the late turnout for livestock, which leads to greater vigor of plant species. The total grazing use in numbers of AUMs grazed by all animals is just slightly less in the maximum wildlife alternative. Although range would improve in condition the grazing level under the maximum wildlife would create a situation where the sediment yield would not change in a proportionate amount.

Commenter No. 32

5. Comment: A third order soil survey was completed in 1977 by the SCS with soils classified to the series and phase of series level. The draft supplement does not provide sufficient explanation as to how these data were used in deriving the conclusions set forth in the document.

A Soil Association Map (Map 2-5) and Summary of Soil Characteristics (Table 2-11, page 2-18 through 2-21) are presented, and they include useful information. However, nothing is done with this data. It is not correlated to the respective range sites mapped within the Challis Unit.

No range site map is presented in the draft supplement, nor is any tabulation of range site characteristics made for the Challis Unit. Omission of this basic data is critical.

Response: The soils in the Challis Unit were originally mapped using soil mapping units. Each mapping unit is made up of a group of associated soils. A mapping unit description was supplied with the soils map. This description gave the percentages of each soil (by series or phase) that occurred within each mapping unit.

One of the first steps in the compilation of the vegetation inventory was to measure the size of each soil mapping unit. The soils within each mapping unit were then correlated to the appropriate range site (for example, mapping unit FRBF contains 55% Flagton soil series, 30% Gelkie, 10% Frailton high rainfall phase and 5% Pedoli. The Glagton, Frailton high rainfall and Pedoh series are all found in the gravelly loam 8-13 range site. Thus, 70% of this mapping unit is of the gravelly loam 8-13 range site. The Gelkie series is found in the gravelly loam 13-16 range site. Thus, 30% of the mapping unit is in the gravelly loam 13-16 range site. For a complete description of range sites with a listing of associated soils, see Appendix 2-E). The acreages for each range site (broken down by condition class) were then tabulated in Table 2-2.

The number and geographic arrangement of range sites in the Challis Unit makes the job of presentation of this data in a document the size of the Draft Supplement Environmental Statement impossible. For this reason, after all calculations were completed, the data for several range sites were combined and presented under the title "Vegetation Types." For example, the gravelly loam 8-13 and Flagstone 8-11 range sites were combined and the data was presented under the vegetation type "Wyoming big sagebrush." The vegetation map (Map 2-1) was constructed in a similar manner. Here, it was also necessary to identify that an area was of a particular vegetation type if the majority of the land was of that type (as much as 49% of a mapping unit in a shadscale area may have been something other than shadscale). It would have been impossible to present a map any more detailed than this in this document. Detailed maps (as well as all calculations by range site or soil mapping unit) are available at the Salmon District Office of the BLM. The text has been expanded and ecological site descriptions are located in Appendix 2-E.

Wildlife Terrestrial

1. Comment: On page 3-34 the bottom paragraph should reference Table 3-15. In Table 1-4 antelope get 426 AUMs. Should this be for each season or the total for the three seasons; summer, spring and fall?

Response: Text revised, all tables referenced. Antelope receive 426 AUMs for the total time period; summer, fall, spring (November-April).

Commenter No. 15

2. Comment: The BLM states in all their EIS's that the mountain sheep's winter range is in poor condition. This is not true. Their winter range is in very good condition. When you can walk through grass halfway to your knees, in canyon after canyon, there is no way that range is in poor condition.

Response: The draft supplemental statement (page 2-34, Table 2-19) indicates that only 32 percent (5,077 acres) of the bighorn sheep winter range is in poor condition. Sixty-eight percent of the winter range is in fair to good condition.

Commenter No. 28

3. Comment: The factors used in weighting diet preferences among the grazing ungulates contains some significant errors. Grass never plays an important role in the diet of deer except for a very short time in early spring. More realistic factors for deer, antelope and bighorn sheep for spring and fall-winter are as follows (BLM figures in parenthesis):

	Spring			Fall-Winter		
	Grass	Forb	Browse	Grass	Forb	Browse
Deer	(3) 5	(7) 90	(47) 5	(12) 0	(5) 10	(83) 90
Antelope	(25) 4	(25) 50	(50) 46	(5) 5	(5) 5	(90) 90
Bighorn Sheep	(3) 15	(3) 60	(94) 25	(84) 54	(8) 6	(7) 40

The errors in the application of the biological use factors and the diet preference factors would cause a significant error in determining the number of AUMs of forage available for each class of grazing animal.

Response: The figures used for food habits were derived from an extensive literature search. The final values were mostly from studies done on the Challis Planning Unit or on the Pahsimeroi Valley, which is immediately adjacent to the Challis Planning Unit. These studies are listed on Table 2-17. Additional studies showing the food habits of antelope include Segerstrom (1977); Severson et. al., (1968); Yoakum (1974); Sundstrom et. al., (1973); and Taylor (1975).

It should be noted that the figures for bighorn sheep spring use were transcribed incorrectly in Appendix 2-A in the Draft Supplemental ES.

These have been corrected. ALso, the commenter miscopied the figure for spring use of grass by deer. This figure should have been 43, not 3.

Comment No. 29

4. Comment: I question whether the objective of providing forage for 220 bighorn sheep can be met with only the protection of the critical bighorn wintering areas. The critical portion of winter range in the East Fork is at or near winter carrying capacity. The goal of 220 bighorns will not be reached unless winter ranges bordering the critical areas are extended and supplied with good quality bighorn habitat.

Response: There are not data available which show any of the Challis bighorn sheep winter ranges are at or near winter carrying capacity. On the contrary, data from the Lauer and Peek study completed in 1976 and from the soils and vegetation survey completed by the BLM in 1977 show bighorn sheep forage quantity to be in excess of current or projected needs of bighorn sheep. Within the confines of presently known bighorn winter ranges the following AUMs (800 pound forage units) will be available for bighorn with implementation of the proposed action:

Allotment	AUMs Available to Bighorns
East Fork	339
Road Creek	133
Spud Creek	88
Garden Creek	155
	715

The projected number of 220 bighorn sheep will consume only 227 AUMs (32%) of the 715 available to them.

5. Comment: In this section (page 3-20, paragraph 7) as well as others (page 3-16, paragraph 4), (page 3-17, paragraph 2) the statement is made that there is little competition between livestock and wildlife due to the fact wildlife are presently concentrating use in areas where livestock do not graze due to distance from water and steepness of slope. Based on wildlife use in areas where livestock are not grazed, I believe that much of the area presently used by livestock would be used by wildlife if the vegetation was not abused through livestock and wild horse grazing. The drastic change in plant composition through overuse by livestock has virtually eliminated mammalian and avian use along most riparian zones. The proposed plan does little to mitigate this adverse effect (page 3-14, paragraph 2). This is a long term adverse competitive effect that has not been adequately covered in the section on adverse effects.

Response: Increased wildlife use in areas where vegetation condition is expected to improve is discussed in Chapter 3. Although populations of animals using improved areas can be predicted by using Appendix 4. An additional table (Table 2-5) in the final supplemental statement will also help make wildlife use predictions.

Impacts resulting from the continued deterioration of riparian zones has been discussed in the draft supplement statement, Chapter 3, page 3-6, paragraph 3. Studies in the Challis area have shown some wildlife still use the riparian zones even though they are in poor condition. Since no improvement is expected in condition of the riparian zone, it is assumed the same animals would be expected to continue their use of this area. The proposed action, as stated in Chapter 3, is not expected to cause changes from the present situation and it will continue to limit the potential for producing habitat for more wildlife species.

Commenter No. 32

6. Comment: The EIS states that it will accommodate the Idaho Fish and Game Department's projected wildlife plan, without any assessment as to whether this is a realistic projection and any analyses of the interaction of implementing this projected plan with other goals and objectives developed through the MFP process.

Response: The projected wildlife populations resulting from the Idaho Department of Fish and Game plan were analyzed for their conflicts and compatability with other resources during Step 2 of the MFP process. At this time it was determined by the Area Manager that population projections and Idaho Fish and Game goals were realistic. This determination was based on cooperative input from both the Idaho Fish and Game Biologist and BLM Biologist.

Wildlife Aquatic

Commenter No. 3

1. Comment: On page 3-28 of the Supplement, it is indicated that wildlife is responsible for part of the aquatic habitat degradation. To substantiate the supposition, what site-specific data can be cited by BLM? Unless proof exists that damage has indeed been caused by wildlife in the Challis Unit, the supposition is purely speculative and is designed solely for the purpose of shifting the blame from substandard livestock management practices which have prevailed. Also on page 3-30, wildlife grazing is identified as a cause of accelerated erosion and stream siltation in the Road Creed drainage. Again, it must be asked what proof exists?

Response: Livestock, wild horse and wildlife grazing all adversely impact the aquatic environment to different degrees. No site specific data exists for the Challis Unit to quantify damage caused by wildlife although it is felt, due to seasonal population distributions and habitat selection, that only minor detrimental impacts can be attributed to large wildlife species.

Text revised to indicate adverse impacts by wildlife are considered minor.

Comment No. 9

2. Comment: The ES proposes to fence streams to improve fish habitat. Will fences be built only where brush cover is an inadequate barrier to protect the stream from livestock? If there are 22.5 miles of important anadromous streams how was it determined to only fence 3.25 miles as stated on page 1-16 and 1-9?

Response: Through conflict analysis of resource uses and values it was recommended that 3.25 miles of stream be fenced. To fully understand all the rationale for this recommendation one must review the Challis Unit MFP which is in the Salmon District. This 3.25 miles is along a portion of the stream that receives heavy grazing use from primarily cattle.

3. Comment: The DES discusses deterioration of spawning and rearing habitat for trout and salmon (page 2-37). The final statement should elaborate on this discussion in relation to previous impacts from grazing.

Response: Chapter 2, Wildlife Aquatic, identifies habitat as it is today. Impacts resulting from the proposed action are identified in Chapter 3, Wildlife Aquatic. Impacts from past use of the unit determined the quality of the habitat today and are not part of the impacts from the proposed action.

Commenter Nos. 32 and 43

4. Comment: The draft supplement concedes that it will not substantially enhance fishery values. However, it provides no analysis of whether measures exist to better enhance the aquatic environment and why a proposed action was selected which was acknowledged to have little beneficial effect upon this significant natural resource.

Response: The Proposed Action and Alternatives for the Supplemental Challis Range Management Statement were developed after considering all

resource values. The purpose of the statement was then to analyze the environmental impacts of the proposed action and alternatives.

Measures do exist to enhance the aquatic environment as outlined in our fisheries section of the Management Framework Plan, Step 1 (MFP-1) and will be further considered in the Anadromous Habitat Management Plan (AHMP) to be completed by May 1, 1979, for the Challis Planning Unit.

Commenter No. 36

5. Comment: All impacts, including ever increasing human use, need to be considered in evaluation of grazing, fisheries and riparian habitat trends. We believe proper management of the entire watershed provides better protection than streambank fencing.

Response: The intent of the supplemental grazing statement is to analyze the impacts of the proposed action on the environment. Mitigating measures are designed to reduce or eliminate impacts caused by the proposed action. Fencing of riparian zones would provide the quickest vegetation response to mitigate impacts to fisheries habitat and habitat of mammals and birds using the riparian zone. The only other alternative resulting in the same vegetation response would be elimination of livestock. Proper management of the entire watershed would not provide better protection of riparian habitat because it would not eliminate the natural tendencies of cattle to congregate around sources of water. Consequently the riparian zone and its inhabitants would continue to be adversely impacted if livestock use is continued.

Wild Horses

Commenter No. 32

1. Comment: The EIS proposes a reduction in the wild horse herd, without any analysis presented as to how the proposed herd size was determined. For example, no exposition was provided as to whether the size was predicated upon the limitation of winter range, competition with other ungulates, resource damage or the interaction of the proposed herd size with other objectives set forth in the EIS.

Response: Text revised, Appendix 1-B was revised to be more specific in rationale of allocation of forage. The basis of determining the allocation for wild horses was the capability of the winter range presently available for the wild horse.

Socio-Economic Conditions

Commenter No. 4

1. Comment: Table 2-30, Average Returns for 110 Ranches in Custer County, Idaho, is another generality. Reviewers of this document should be concerned with the welfare of the 39 operators in the Challis Planning Unit. There is no information that would project the impact of the proposed action on the 39 operators in that Unit as compared to their present situation. There is no question that the impact on Custer County is important, but by the time all the other planning units in Custer County go through the same process as the Challis Planning Unit, the livestock industry in the entire county may be decimated.

Response: Chapters 2, 3 and 8 have been revised to reflect impacts on small, intermediate and large operators in the Challis Planning Unit. Both economic and sociological data are presented to substantiate impacts to the 38 operators in the Challis Planning Unit. Economic impacts will decrease the income of all ranchers and could force 5 to 13 ranchers out of business. Secondary impacts are also discussed.

2. Comment: There is no mention, however, that the services, state and local, and non-agricultural sectors would dry up if the agricultural and mining economies were eliminated, as actions proposed in this document would ultimately lead to. Most of the supporting services in Custer County are there because of the agricultural and mining economy.

Response: There is no doubt that ranching operations play an important role in the economy of Custer County. The impacts due to the proposed action would have little or no direct effect on taxes and services. While there would be a loss of income from the present situation, only the intermediate sized operators are currently making a profit and they would continue to do so under the proposed action, though the profit would be smaller. Secondary impacts to the community are explored in this section on public values and attitudes in Chapter 3.

3. Comment: The environmental impact statement should take a closer look at the economic impact of the beef exported from Custer County to other area feed lots.

Response: The economic analysis focused on Custer County because most of the impacts would occur there. It is believed that the reductions would not impact any feed lots to a degree that would be significant. Some out-of-county feed lots may lose some business but the overall economy would stay the same.

4. Comment: Page 3-34 says that there will be a loss of $307,000 of cattlemen's income for the 38 permittees. This would average $8,079 loss or reduction of 69 cows from 180 head herd which would be 38 percent of

the average herd. What makes the Bureau of Land Management feel that if all of these 38 permittees are losing this much money, only 7 stockmen will be selling out?

Response: Five to 13 operators could be expected to be selling out due to the proposed action. Many livestock operators are as interested in maintaining a style of life as they are in earning a profit. Economic theory tells us that a "prudent man" would not stay in business if he lost money for several years. Yet ranchers have lost money for four years straight and are still in the livestock business.

5. Comment: Page 3-39 concerns loss of jobs and income. It should show off the impact of the loss of the total $407,000, not merely $70 or $230,000 loss as was done. Would it be possible to break down the income figures more clearly to show how much motel, restaurant and other trade income, comes from tourists and how much comes from residents of the county. If $370,000 of the income leaves the local economy, what impact would that have on local ranch suppliers?

Response: In the final supplemental statement secondary impacts are calculated on the proposed project and the alternatives. It is extremely difficult to obtain data on the number of visitors to the Challis area, even the Forest Service doesn't report the data on a county basis.

6. Comment: It was good to see more discussion of the impact of second home sales in the draft supplement than there was in the final ES. Yet the section on Impacts of the Proposal, the discussion of second homes still seems inadequate. Page 3-39 says that as homes increase, the tax base will improve and page 3-40 says new homes will improve the tax situation. This has very seldom been the case in any rural area with second home subdivisions. Specifically, a study entitled, "Recreation Home Developments in Idaho: Five Case Studies," by Richard D. Payne, Ph.D., published at Boise State University in March of 1977, said that in the case of Island Park, cost to the county outweighed revenue.

Response: The introduction to the same study says, "the literature suggests that the development of recreation subdivisions may be advantageous to the counties in which they occur and the communities near which they are located" (page 4). The study goes on to say that a number of factors are decisive in determining the costs and benefits.

7. Comment: Page 3-33 of the supplement says that to compensate reduction of AUMs, livestock operators will have to buy hay, lease pasture or reduce numbers. Yet on the same page BLM admits that, "There is very little irrigated or dry pasture to lease in the Challis area. The only alternative available for many of the range users woud be to reduce their herds: How much land is available in acres for use as

pasture, especially in the face of proposals in the supplement for housing and industrial growth?

Response: Text revised, the probability of livestock operators leasing pasture was not considered a probable means to compensate grazing on the public land.

8. Comment: If both agencies continue such cuts on public land, the future of economic cattle grazing in Custer County and indeed throughout much of the west seems very bleak. We feel that the cumulative effects of their management plans do need to be addressed.

Response: Other agency plans are not firm enough to identify potential cumulative impacts. When these other agencies develop these plans, the cumulative impacts would be assessed.

Commenter No. 21

9. Comment: And on Page 2-51, I question the amount they use for "land rent" It seems that payments made to the banker, whether it is the local bank, Federal Land Bank, PCA or the Farm Home, should reflect a larger sum if these ranchers are making any principal and/or interest payments for the purchase of their ranches.

Response: These figures have been updated in the Economic section to reflect actual payments by ranchers in the Challis area. Interest, expenses include mortgage payments and payments on other outstanding loans.

10. Comment: A comment on the economic study that they used: On page 2-50, the economic study for the ranchers stated that one-third of the ranchers worked half the time off the ranch. But I woud like to point out that these ranchers only account for 9 percent of the AUMs. So you have presented true facts, but have given a very false impression.

Response: The final ES has been revised in the Economic section to show that virtually all the small operators work off the ranch; they account for 38 percent of the operators. This shows that their ranch operations are submarginal.

Commenter No. 32

11. Comment: The EIS does not present any comprehensive social and economic analysis which would apply to all public values.

This section of the draft supplement is unacceptable in its present form. It deals only with the livestock industry and essentially this input to the local economy. Wildlife, both fish and game, recreation, archaeology and other values are described in detail in the text but are ignored in the Socio-Economic analysis. This section should reflect all values to all publics.

Response: The socio-economic section reflects the impact of the proposed action on the socio-economic structure of Custer County.

Citizens were contacted in Custer County both in person and via the telephone to determine social values and attitudes. The sociological and economic sections address the impacts of the proposed action. Impacts discussed in the text were those judged to be significant. The text (Chapter III, Public Values & Attitudes) addresses the possibility that other groups could have relevant views on the proposed action.

12. Comment: The economic impact on Custer County tax base of present EIS Recreation Areas, Primitive Areas and Wild and Scenic Rivers should be considered.

Response: The economic impact on Custer County tax base would be beneficial. Studies conducted by the State Lands Department show that vacation home owners demand fewer services than full-time owners. Most probably second home development will increase the tax base.

13. Comment: Economic evaluation should be on the same basis for all resources. For example, if the value of the fisheries is computed to the mouth of the Columbia, then the value of a calf should be computed to the consumer's table. Also an economic value should be placed on wild horses.

Response: The fisheries evaluation section has been removed. Consequently all resources have been analyzed with the same criteria. We don't have any data identifying an economic value for wild horses.

Commenter No. 37

14. Comment: The ES should speak more to the most important part of the environment of the area, and that is the people who now live here. Those who lived here and those who settled and developed to make this area available to the rest of the country. It shoud speak to those people who were born here and who would like to continue living here.

Response: The Public Values and Attitudes section of Chapter 3 of the final ES describes the impacts on the present community of Challis and Custer County.

Commenter No. 44

15. Comment: The economic impact on the Custer County tax base of the present and future ES should be considered in context with other federal developments and proposals for recreation areas, primitive areas, et cetera.

Response: The impacts on the tax base due to second home development would be beneficial. Studies done by the State Lands Department show that recreation home owners demand significantly fewer services than do full time home owners. Development would most probably increase the tax base. Without knowledge of the acreage that would end up in summer home development, quantification of this impact cannot be accomplished. Without firm knowledge of what other agencies propose in Custer County, it is impossible to identify potential cumulative impacts.

16. Comment: What will be the economic and social impact on Challis and Custer County when you put these ranchers out of business? Their only choice after you have destroyed the livestock value of their operations will be to sell their land to developers. What will be the impact on wildlife and the natural state of the area then?

Response: The draft supplemental statement discussed impacts to wildlife resulting from land development as specific as possible with the data available. Those impacts were found in Chapter 3 and Chapter 8. The economic and social impacts are identified in the Socio-Economic section of Chapter 3 and Chapter 8.

Water Resources

Commenter No. 9

1. Comment: Pages 3-40 through 44 do not mention any impact from second home development on water quality, yet there is the chance of increased runoff, diversion of water for domestic needs and possibly sewage contamination. These impacts arte noted on Page 3-31.

Response: Text revised, the water quality sections were expanded to include the impact on water quality.

Recreation

Commenter No. 9

1. Comment: Page 3-44 claims that second homes would cause no damage to

recreation. What about the disturbance of game and fish cited on page 3-21 and 3-31?

Response: Text revised, the recreation section (Chapter 3 impacts) was expanded; however, impacts to the recreation resource are still not considered of major consequence.

Commenter No. 11

2. Comment: Page 3-44. The section on recreation impacts contains only a statement that there will be no significant impacts to the recreation resources. The FES should describe the nature and extent of the impacts from proposed range improvements and revegetation on esthetic values, use of recreation areas and facilities, special interest areas, and other recreation concerns.

Response: Much of the impact that could occur on recreation resources as a result of a grazing management proposal are mitigated in Chapter 1 and these would not show up as impacts. It is still considered that impacts to the recreational resources would be minimal.

3. Comment: According to the DES, implementation of the proposed grazing reductions could lead to accelerated sale of private land for recreational subdivisions (pages 2-53 and 3-39). The FES should discuss impacts of increased numbers of seasonal and permanent area residents on recreation use of the Planning Unit and also for nearby major recreation attractions, including the Stanley Basin and the Sawtooth National Recreation Area.

Response: Text revised, the Recreation section of Chapter 3 (Impacts) was expanded; however, it is still considered that impacts to the recreational resource would be minimal.

Commenter No. 43

4. Comment: Why are hunting, recreation and fishing values quantified in some instances and not in others, not included in the economic analysis as it contributes to local, state and regional economies?

Response: Text revised, see Recreation section of the proposed action and alternatives. Predicted changes in recreational use, hunting and fishing could not be quantified because of lack of data. Thus, an economic evaluation could not be made. Changes in recreational use as a result of the proposed action and alternatives would not be great in magnitude, however.

Cultural Resources

Commenter Nos. 2 and 11

1. Comment: Until the requirements of Section 106 are met, the Council considers the DSES incomplete in its treatment of historical, archaeological, architectural and cultural resources. To remedy this deficiency, the Council will provide, in accordance with its "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800), substantive comments on the effect of the undertaking on these properties.

Response: Text revised, standard procedure was included to comply with Section 106 of the National Historic Preservation Act of 1966. This is identified in Chapter 1 under Monitoring Programs, Cultural.

Wilderness

Commenter Nos. 9 and 11

1. Comment: The final statement should discuss how range improvements, revegetation projects and other changes will be avoided in the areas that may be identified for wilderness study (pages 2-59 and 2-62).

Response: Text revised, a Wilderness section was added to Chapter 3, Impacts resulting from the proposed action.

General

Commenter No. 4

1. Comment: Table 2-6 on page 2-8 again points out the ultra-conservative allocation of forage to livestock. Again, there is no data for current use.

Response: Text has been revised to show eight year average use by allotment.

2. Comment: In 1975 (according to Table 1-1), 18,062 animal unit months of active use were listed. In addition, 3,897 animal unit months of non-use were taken at the discretion of the permittees for a total license of 21,959 animal unit months. According to the previous documents an average of 21,908 AUMs of qualifications have been recorded annually on the Challis Unit, instead of the 17,444 stated in the Draft Supplemental Environmental Statement. In addition to this, 948 animal

unit months of exchange use were authorized in the various allotments, most of this exchange use being on state endowment lands. The total licensed permitted use on the Challis Planning Unit has not been less than 21,114 animal unit months since 1948. In 1975 the total licensed use was 21,959 AUMs. The proposed use of 10,436 is only 47.5% of the former use; not 60% as stated in the publication. It is also 53% (9,236 AUMs) less than the 19,672 AUMs suggested for livestock use in the 1977 Final Environmental Impact Statement.

Response: Table 1-1 in the 1976 Challis Final Statement is nothing more than a sequential listing of AUMs actually licensed from the year 1948 to 1975. There were 18,062 AUMs licensed for the year 1975. There were 18,062 AUMs licensed for the year 1975. However, that figure cannot be compared to the 17,444 AUM figure in the Challis Supplement. The 17,444 AUM figure is an average of the last eight years. The six year average presented in the 1976 final was 17,426 AUMs. The downward adjustment of 40 percent was based on the difference between the proposed level of use and the level of actual use based on the past eight years. It is not logical to calculate the adjustment based on the difference between the proposed level of use and the active qualifications because many of the range users are only using a fraction of their active grazing qualifications. This is due, in part, to the fact that the range resource is not producing enough forage to support the higher active qualifications. The ranchers have recognized this fact and have applied for fewer AUMs. The real impact incurred by the rancher is the difference between his average level of use. Therefore, an adjustment from 17,444 AUMs of actual use to a proposed level of 10,426 AUMs constitutes a 40 percent downward adjustment in actual use.

The 1976 final statement proposed a stocking rate of 19,672 AUMs. This stocking rate was based on a range survey that was conducted prior to the range adjudication program in the early 1960s. One of the reasons for preparing the supplemental report was because the BLM decided that the proposed decisions outlined in the 1976 final were based on inadequate resource inventory data. As a result of this decision, the BLM conducted a detailed soils/vegetation inventory in the Challis area. The revised stocking rate proposed in the supplement is based on the new data provided by the rcent inventory.

3. Comment: On pages 1-13 the discussion of rest rotation is again incorrect because of the constraints placed on the system limiting utilization to not exceed 50% of the current season's growth. Reductions in livestock numbers will also tend to reduce the amount of seed trampling that would be affected by heavier concentrations of livestock.

Response: The principles of rest rotation do not require or specify any defined level of utilization. Gus Hormay (1976) stated that "Rest

rotation grazing does not call for heavy grazing under any grazing treatment. Grazing under treatment A for example can be light, moderate, or heavy whichever the manager considers best." Idaho fescue and bluebunch wheatgrass are two of the major perennial grass species in the Challis area. Management plans are designed to perpetuate the existence of these two species. Studies by Mueggler (1975) indicate that the rate and pattern of recovery of these two species, after grazing, is dependent upon the degree of utilization and the vigor of the plants prior to utilization. Idaho fescue in a poor state of vigor took three to four years to recover after heavy utilization (greater than 50%). Bluebunch wheatgrass in poor vigor took six years to recover from heavy grazing. Since much of the native vegetation in the Challis area is considered to be in fair or poor condition, it seems logical to stay within the 50 percent maximum utilization figure at least until such time as the vegetation condition is improved.

4. Comment: Many of the grazing systems, including the Morgan Creek System, were developed primarily to benefit wildlife habitat, using livestock as a management tool. Again, repeating our comments of 1975, no consideration of the progress of other management units, such as Morgan Creek, has been referred to in this document.

Response: Vegetation response to grazing management in the Morgan Creek Allotment is referenced in Appendix 2-F. However, direct comparison of these results to other allotments within the Challis area must be made carefully. The Morgan Creek Allotment receives more precipitation than the majority of the allotments covered in this analysis. This fact causes a difference in the ability of the range to respond to grazing management. The response obtained in the Morgan Creek area may not be obtainable in some of the lower, more arid allotments.

5. Comment: All the alternatives from 1 through 6 considered in the environmental statement are impractical to implement, as is the proposed action. Even alternative 3, which is called in one part of the plan "minimum constraints on livestock grazing" and in another part of the plan "maximum livestock grazing," calls for a 42% reduction in ivestock use.

Response: Downward adjustments in grazing were based on the relationship between an operator's average use over the past eight years and the proposed level of use. An average of 17,444 AUMs have been licensed in the Challis Unit over the past eight years. The proposed level of use is 12,456 AUMs in the "minimum constraints" on livestock alternatives. This constitutes a 29 percent downward adjustment in actual livestock grazing.

Commenter No. 9

6. Comment: The first issue is whether the cuts are necessary. The previous Final Environmental Impact Statement for the Challis Planning Unit released by the Bureau of Land Management in 1977 proposed 19,672 AUMs for domestic animals and 13,871 AUMs of grazing for wildlife including horses. The Draft Supplemental Environmental Statement for the Challis Planning Unit just released does not clearly identify why these allotments were cut to 10,436 AUMs for cattle and 10,202 AUMs for all wildlife as shown on Page 1-2.

Response: The 1976 final statement proposed a stocking rate of 19,672 AUMs. This stocking rate was based on an outdated vegetation inventory. One of the resons for preparing the supplemental report was because the BLM decided that the proposed action outlined in the 1976 final was based on inadequate resource inventory data. As a result of this decision, the BLM conducted a detailed soils/vegetation inventory in the Challis area. The revised stocking rate proposed in the supplement is based on the new data provided by the recent inventory.

7. Comment: To show that local input is being evaluated, possibly it should be written more clearly into the draft. In sections where facts gathered by the Bureau or its consultants, counter statements made by local individuals or their consultants, this could also be mentioned. As it is, local people feel that their comments right or wrong are taken at public hearings and then left out of the ES.

Response: Text revised, Chapter 9 has been expanded to include more information on public input in formulating the proposed action and alternatives.

8. Comments: Modern range management uses grazing livestock to improve range conditions. Such modern management has been demonstrated in both the Herd Creek and Morgan Creek areas. The Bureau's Supplemental Environmental Statement should better reflect the possibility of this sort of management.

Response: An evaluation of vegetation responses in Morgan Creek was used to predict responses of similar treatments (rest rotation) in the proposed action. This is described in Appendix 2-F.

9. Comment: Page 1-20 of the Supplement mentioned the proposal of the Tuscarora Mine; however, the Clayton Silver Mine which is in operation was not mentioned at all. Will this change in grazing management impact the mine?

Response: An evaluation of vegetation responses in Morgan Creek was used to predict responses of similar treatments (rest rotation) in the proposed action. This is described in Appendix 2-F.

9. Comment: Page 1-20 of the Supplement mentioned the proposal of the Tuscarora Mine; however, the Clayton Silver Mine which is in operation was not mentioned at all. Will this change in grazing management impact the mine?

Response: The Clayton Silver Mine operates almost entirely on patented land and has very little if any impact on grazing management. The proposed Tuscarora Mine would necessitate the removal of approximately one-half of the surface of the Brune Creek Allotment in an open pit type operation and other operation needs as stated in the draft supplement.

10. Comment: According to Table 3-15 on Page 3-38, average use for most permittees is lower than current use of AUMs. Therefore the proposed cuts effect may be understated in the supplement.

Response: The eight year average use was used as a base to measure impacts to the livestock operators. It was considered a fair method because of large fluctuations in the operators use in some allotments. A single year (current year) licensed use would not reflect a fair representation of use if heavy non-use was requested in any allotment that year.

Commenter No. 21

11. Comment: The ES is very inconsistent. On Page 3-38, in the proposed action, 36 ranchers' cuts range from 20 percent to 74 percent. But one allotment has zero percent cut. How do you justify this? Why is there no cut here when the tables on Page 8-6 and 8-7 show that this range is on the decrease? Why is there no proposed rest rotation, or deferred rotation to alleviate this downtrend in range condition on this one allotment?

Response: The table listing ranchers and percentage losses from active grazing privileges has no bearing on allotment data. Some of the ranchers on the subject table have grazing privileges in one or more allotments. Some allotments provide grazing privileges for several ranchers. An allotment with a proposed downward adjustment of 20 percent would simply mean that each user in the allotment would take his proportionate share of the reduction based on his active grazing privileges for that allotment. The table showing reductions for each rancher is based on the reduction from his active federal grazing privileges. The table showing reductions for each allotment is based on

a comparison of the past eight year average use and the proposed level of use.

Commenter No. 28

12. Comment: The biological limit factor as it is used in this EIS does not conform to the biological use factor as it is commonly applied in the range science discipline. It is unrealistic and inflexiable and would lead to a drastic underestimation of the total forage available for grazing. The factor (30%) for spring is especially unrealistic as a much more widely excepted rule of thumb factor for spring would be 60%.

Response: The biological limit factors used were found after completing an extensive literature search. A summary of this literature search is presented in Appendix 2-D.

Commenter No. 29

13. Comment: The chapter on relationship between short term uses and maintenance of long term productivity does not appear complete. Data presented in Table 8-68 indicates a substantial reduction in long term productivity for the proposed action (+6,933 AUMs) when compared with the no grazing alternative (+13,754) or wildlife maximized (+11,167) or reduced grazing level (+13,501). A similar situation exists when the annual net income short term is compared with the annual net income after 15 years; proposed action -38,000, wildlife maximized +136,458 and reduced grazing level +151,772. It appears that if the wildlife maximized alternative were chosen there would be an additional 8 percent short term economic loss but a long term increase of $174,458 would be realized. I suggest a more detailed description of the short term use vs. long term productivity be included.

Response: The information in Chapter 6 only pertains to the proposed action. Impacts resulting from any of the alternatives are not identified in this chapter. Chapter 6 was completely rewritten to be more specific in descriptions of impacts.

14. Comment: The MFP rationale for continued early spring grazing is not given and should be included in Appendix 1-C.

Response: The allocation process of allowing only 30 percent use of grass in the spring due to the biological limits of the vegetation is discussed in Appendix 2-A. If early spring grazing continues the livestock adjustments would be reduced much more than summer or fall grazing. Many of the operators are limited to spring use due to necessity of removing livestock from hay meadows and the fact that they

run their livestock on National Forest Lands during the summer and early fall months.

15. Comment: This section states that "vegetation will receive the same or additional livestock use in Round Valley, Pine Creek and Sullivan Creek. Page 3-16, Paragraph 2, "the proposed action is not expected to change the congregation of livestock and wild horse use in riparian zones and the deterioration of riparian vegetation." Considering the use of early spring and seasonal grazing in these units and the vegetative condition and trend I question if the management plan meets the requirements of the Federal Land Policy and Management Act of 1976, Section 102.

Response: The proposed action was developed to meet the requirements of the Federal Land Policy and Management Act of 1976. If monitoring of grazing in the unit indicates the proposal falls short, further adjustment in grazing use of the unit would be made.

Commenter No. 31

16. Comment: One of the most important recommendations in the 1978 Draft for the Challis Unit appears in Table 1-4. Under the subtitle "Watershed," it says, "Do not graze more than 50 percent of the current year's production of forage plants used by grazing ungulates." How to apply this standard of forage utilization where the rest rotation method is used is not explained, as under that method 100 percent of the current growth will often be used in pastures designated for the "rest treatment." The presence of wild horses unless gathered and handled with the cattle will obviously upset use of the rest rotation method.

Response: The actual grazing treatment by pasture would be defined when an AMP is prepared. An environmental assessment would be made of the AMP prior to implementation on the land. The AMP would be restrained by MFP 2 recommendations if they are accepted by the decision maker.

Commenter Nos. 9 and 32

17. Comment: Finally, there is an unexplained difference in the animal unit month calculations between Tables 2-1 and 2-2. Table 2-1 shows a total of "AUMs Available for Livestock" of 10,436. Table 2-2, by addition of all AUMs by vegetative type, condition class and allotment, provides a total of 6,846, as indicative of the total AUM production of the Challis Unit, not just those available for livestock. Table 2-3 (p. 2-5) shows present total AUMs by allotment for spring and summer use at 30,297 and 34,617 respectively. When all of these various figures are compared to the proposed use listed in Table 1-2 (p. 1-2), one must

question how such amounts were calculated, why they do not agree, and how they relate to actual inventory data.

Response: Table 2-2 portrays the AUMs available for livstock use when the suitability criteria as outlined in memo WO 78-134 were used in the strictest sense. After this table was constructed, the AUMs for livestock were tabulated (by allotment) under the following headings: 1) Suitable land, 2) Land greater than 50% slopes, 3) Fragile land, 4) Low producing areas with water, 5) Low producing areas without water, 6) Potentially suitable areas which lack water and have water developments proposed, and 7) Potentially suitable areas which lack water and have no developments proposed. For allocation purposes, all of categories 1, 4, and 6 were allocated to livestock. Forty percent of category 7 was also allocated to livestock. (The criteria and justifications for these deviations from the memo WO 78-134 appears in a memo from Idaho State Director to District Manager, Salmon District, which is reprinted in Appendix 2-C). The AUM totals in Table 2-1 of the draft are those calculated using the Appendix 2-C suitability criteria. Modifications to WO 78-134 added 3,590 AUMs to the total AUMs on Table 2-2. Table 2-2 shows a total of 6,846 AUMs. (6,846 + 3,590 = 10,436).

When using the biological limits method of forage allocation, it is very difficult (if not impossible) to find the toal AUMs available for all users when they have food habits which vary widely. For this reaoson, a different methodology was used to find the present and potential AUM production. For a complete methodology on how this was done, see Appendix 2-F. It should be noted that the AUMs presented in this table are total AUMs for all animals present without taking suitability into account whatsoever.

Commenter No. 32

18. Comment: We believe that the final version of the supplement must contain an evaluation of the adequacy of this land use plan for the Challis Planning Unit. This evaluation would require not ony that the BLM set forth the specific recommendations which were the product of the MFP planning process, as the Bureau has done in Table 1-4, but that it also present the underlying analysis which led to the MFP Step II recommendations, as well as the "resource tradeoffs," and some evaluation of the adequacy of this analysis. The underlying analysis and land use tradeoffs should clearly be set forth in substantially greater detail in the final supplement.

Response: Text revised, Chapter 1 was expanded and provides better analysis leading to MFP II recommendations. Also, the MFP is available for inspection at the Salmon District Office.

19. Comment: It describes particular grazing systems which will be imposed, without setting forth in proper detail the reasons for the selection of one grazing system over another and without any analysis provided to justify the predicted benefits of those systems.

Response: Text revised, a section has been added to the appendix (1-C) drawing rationale for selecting grazing systems.

20. Comment: However, no specific assessment is made of the particular grazing systems, primarily rest rotation, which will be utilized for remaining cattle allowed to graze on specific land areas and the effects therefore upon the terrestrial and aquatic environments. For example, there is no comparison among the various systems and alternatives in their effects upon cows, horses, deer, elk, sheep, fish, etc., or watershed attributes and values of the impacted area.

Response: Table 3-2 identifies the impacts predicted by grazing treatment upon the vegetation resource. The "General Impacts" section of Wildlife Terrestrial Chapter 3 identifies impacts to wildlife species. Impacts on wildlife aquatic habitat is predicted to be about the same under all grazing systems.

21. Comment: One is left, therefore, without any explanation or analysis anywhere in the document which would describe, in these circumstances, why the Bureau has selected another alternative for the "proposed action."

Response: The identification and analyses of alternatives is an integral part of the Bureau's land use planning process and planning documents. Based on resource inventories and data analyses, the individual resource specialists prepare activity recommendations which would maximize benefits for that particular activity, i.e., wildlife, recreation or range management. Quite often there are serious conflicts between competing resources which must be resolved in Step II of the MFP. To determine the preferred alternative, a core team, consisting of the Area Manager, Chief of Resources and the Planning Coordinator, prepares an indepth analysis of each activity recommendation as follows:

(1) Identify conflicts with all other recomemndations and resource values along with associated problems and issues.

(2) Delineate viable alternative actions or recommendations.

(3) Prepare an impact assessment which identifies the effects of implementing various alternatives. The assessment includes analyses of resource values, social and economic values, public opinions and expectations, legal and policy constraints, and economic and management

feasibility. The resource specialists are frequently consulted, individually or in groups, throughout the process.

(4) Based on the above analyses a preferred alternative is selected which offers the best use or combination of uses which woud maximize the benefits to all possible resources and values. The preferred alternative is then brought forward as a multiple use recommendation or proposed action. The process could accept or reject the original activity recommendation or suggest a modified course of action based on any or all factors reviewed in the impact assessment.

22. Comment: Nowhere in the Draft Supplement is there any discussion about the cost of implementing the proposed action or any of the alternatives.

Response: Text revised, Table 1-9 of the proposed action (Chapter 1) has been added which estimates total cost of proposed projects and totals were added to each alternative.

23. Comment: The EIS describes particular range improvements that will be imposed, again without any assessment presented that constituted the Bureau's reasoning in developing and planning these improvements, beyond the statement that they were necessary to implement the range management plan.

Response: These range improvements are in the proposed action and alternatives as proposals only and an environmental assessment of each would be necessary prior to development. More intensive reasoning for the development of the proposed improvements can be found in the MFP which is available at the Salmon District Office.

Commenter No. 43

24. Comment: What rationale prompts selection of one grazing system over another? How is this applicable to the area impacted?

Response: Text revised, Appendix 1-C was added to discuss the rationale used in selecting grazing systems.

25. Comment: Range suitability criteria has been established. I do not necessarily quarrel with these criteria but must ask a question. Where range sites have been identified and used in the survey, are not these adjustments already made relative to steepness of slope, soil characteristics and determination of usable forage, hence stocking rate? If so, then what remains is an adjustment for water availability where applicable. And if this is the case, it should be so identified and not

confused by soil percentage criteria. And if so, do not present criteria impose an overlapping adjustment?

Response: Initial vegetation production data was prepared independently of suitability. Suitability was not a criteria for determining or identifying ecological site. Suitability determinations were made after total vegetation production was known for each allotment. Therefore, there is no opportunity for an "overlapping" or "double counting" for suitability reductions. Adjustments for steepness of slope, lack of water, and low productivity were made after vegetation production was determined.

Commenter No. 44

26. Comment: A public document which must respond to so many different interests should have the supportive data upon which its premises are based more readily available to the public.

Response: Text revised, the appendix section was enlarged adding supportive data to the document.

27. Comment: Although the statement leaves the impression that range conditions need improvement, a fact upon which there is no disagreement, there is little discussion of the effects of actual use at present. Alternative No. 1 comes close to so doing but appears to presuppose a status quo approach without addressing any changes in techniques or range management. Alternatives are presented in an either/or approach rather than a recognition that the natural variables of the area yield no such stark contrasts.

Response: Chapter 2, Livestock Grazing and Economics sections identify average use made by livestock grazing in the Challis Unit. Alternative 1 identifies impacts of no action during the ES timeframe. The alternatives are presented as a comparison of different approaches in managing the grazing resource in the Challis Unit.

Commenter Nos. 4 and 44

28. Comment: Although local residents were interviewed, there is no indication of the degree of contact with them in the resource description. There is also no indication of the degree to which the comments of the county residents will be taken into account in the final plans for the unit. It has been the position of the Idaho Rangeland Committee and the state that the people who have nurtured the land should have a voice in its use.

Response: Public comment was considered during the planning process

that led to the proposed action. The Challis MFP has documented public response and is located in the Salmon District Office. Public comment was considered in the final preparation of this document and response to this comment is in Chapter 9, Final ES.

Commenter No. 45

29. Comment: Based on a review of the document, trips through the Challis Planning Unit, interviews with BLM personnel and experts in the field of range science, we find the methodology used to determine stocking rates totally unacceptable. Specifically, we refer to such systems as "proper use," "allocation of forage" and "suitability criteria." Stocking rates cannot be determined by these methods.

Response: Vegetation was inventoried by actual clipping and weighing of specific vegetation species within large homogeneous areas (ecological sites). This methodology is accepted by many natural resource managing agencies including the Soil Conservation Service. The methodology is outlined in detail in the National Range Handbook (1976). Proper use is nothing more than a degree and time of use of current year's growth which if continued will either maintain or improve the range condition consistent with conservation of other natural resources. These levels of use for vegetation species have been in use for many years. The "use factor" for an individual vegetation species may vary depending on such things as season of use, class of livestock, and type of management system. These factors were considered when determining stocking rates in the Challis Unit. Close monitoring of the initial stocking rate is the only conclusive way of determining whether or not proper use is occurring and objectives are being met. Suitability criteria may vary from one situation to another. It too must be monitored and adjusted to fit site specific situations.

Commenter Nos. 4, 28 and 45

30. Comment: Fifth alternative. We hereby propose an alternative that has not been considered, but that is acceptable. Our proposal is to maintain present stocking rate, develop an intensive management plan, immediately implement a more realistic range improvement program, reduce wild hore numbers to 162, and monitor trend and condition. It may be necessary to initiate temporary voluntary reductions in some areas at the time of implementing the plan. We feel that Morgan Creek should be used as the model for how management plans can be implemented in the Challis Planning Unit. Morgan Creek had as many problems as Challis, but stocking reductions were diverted through a good management plan.

Response: Existing studies and inventories for the Challis Unit indicate a considerable amount of rangeland in poor to fair condition in

a downward trend. Our objective is to reverse these downward trends and improve the condtions of the range. Several recent studies indicate that more than just a management system is required to improve range conditions, especially if conditions are poor to begin with. If stocking rates remain the same as in the past, and rest rotation systems are implemented, utilization of available forage will be even greater in the grazing units because one unit will be protected from grazing during the rest treatment. Recent studies indicate that ranges in poor and fair condition cannot recover from heavy use, even after three to five years of rest. If heavy past use is partially responsible for deteriorating conditions, it does not seem logical to perpetuate or actually increase use in the future, especially if we expect to reverse downward trends and improve range conditions.

Commenter Nos. 4 and 45

31. Comment: In fact, the figures presented as present AUMs are false. They have conveniently left out the actual licensed authorized AUMs which is 21,959. There is considerable difference between that and the 17,444 AUMs.

Response: The total federal qualifications for the Challis Unit were considered in the economic impact assessment in Chapter 3 and in each alternative. The 17,444 AUMs is the average annual use made in the unit over the past eight years. The difference between 17,444 AUMs and the total qualifications is voluntary non-use by the livestock operators.

RESPONSES TO LETTERS RECEIVED AFTER THE COMMENT PERIOD CLOSED

University of Idaho Cooperative Extension Service

The text was revised to clarify the methodology of determining the stocking rate. A general response identifying the suitability criteria was also included.

U.S. Forest Service

The text has been revised and corrections were made where applicable.

Jim L. Dewton

A general response identifying the suitability criteria was included.

Sierra Club

The text was revised to reflect concerns in rationale for selecting grazing systems for the allotments.

A monitoring program will be established to measure the progress of the grazing system selected if changes (such as longer rest periods or different turnout dates) required they would be implemented.

Cost of the proposed action and alternatives was added to Chapters 3 and 8.

Idaho Wildlife Federation

The impacts discussed in the letter identified in this document, implementation of the monitoring system for Aquatic Life and Water Quality would measure the severity of these impacts.

Changes in grazing management would be made if required to protect this resource.

University of Idaho, Veterinary Medicine

No response needed, commenter identified the need for management of the wild horse herd in the Challis Unit.

Charles A. Benson

The economics involved with selection of the proposed action would be considered prior to implementing grazing management in the unit. This document identifies the environmental impacts resulting from the proposed action and alternatives.

Soil Conservation Service

The soil survey was used in identifying acres with potential for range improvement by vegetation manipulation. This was done during the planning state (URA preparation).

Only one years trend data was available, so trend is identified as apparent trend.

The monitoring system for Aquatic Life and Water-Quality would measure the severity of impacts and changes in grazing management would be made if required to protect the resource.

Grazing systems would be monitored; if changes are required (turnout dates), they would be made.

It is recognized other management proposals could be made. The management proposals identified reflect the need and uses and resources of the present time.

Forage allocation was made on the basis of the existing condition of vegetation which reflects past use.

American Horse Protection Association

The text was expanded and rationale for determination of wild horse herd numbers is included in Table 1-5.

The present wild horse range does not have the capability of supporting 582 horses. The winter range is the limiting factor in supporting animals. The total forage produced on the area that wild horses graze in the winter is 340 AUMs. Animals can sustain themselves on overused ranges until combination of forage scarcity and heavy snow cover cause a die-off to occur. To prevent such a catastrophe is one of the purposes of the proposed action. Finally, it is recognized that the present condition of range in the Challis Unit is a result of past use by all grazing animals.

Department of Energy

No response required.

Wildlife Management Institute

Allocations for wildlife reflect new data on current populations and proposed population levels.

Chapter 1 (monitoring section) addresses trespass control of livestock.

State of Idaho Division of Budget, Policy Planning and Coordination

No response required.

Appendices

APPENDIX 1-A

BLM MULTIPLE USE PLANNING

The basic process used to develop land use plans (Management Framework Plans) is as follows:

Inventory. Basic data is gathered concerning the seven basic resource programs: lands, minerals, forestry, range, watershed, wildlife habitat and recreation which includes historical, cultural and archaeological data. Data from a variety of sources is gathered including both primary and secondary information.

Unit Resource Analysis (URA). For a defined geographic area called a planning unit, the URA consists of four steps:

Step 1: Definition of the planning unit and preparation of a base map

Step 2: Preparation of a physical profile including climate, topography, geology and soils, vegetation, water resources, animals, fire, limiting physical factors and developments

Step 3: Description of the present situation including use, problems, production, trend, etc., for each of seven resource categories based on all available inventory and information

Step 4: Management opportunities are analyzed and recorded for each of the seven resource categories

Social-Economic Profile (SEP). For an identified economic region, a Social-Economic Profile is an information document used to gather, organize, analyze and record social and economic information required for the development of a Management Framework Plan. This information is used or input to the Planning Area Analysis to help evaluate the significance of resource values.

Planning Area Analysis (PAA). The Planning Area Analysis analyzes social, economic, environmental and institutional values of the resources in the geographic area which will be covered by a Management Framework Plan. The PAA provides a data base to consider socio-economic conditions and implications for resource management.

Management Framework Plan (MFP). The Bureau's land use plan establishes coordinated land use allocations for all resources for a specific land area. The MFP process results in a "best mix" of how the various resources will be managed to provide the maximum benefit to the public. The MFP consists of three steps:

MFP Step 1: A specialist for each of the various resource categories develops objectives and specific recommendations which would maximize production, use and maintenance of each resource. At this point, these recommendations are not multiple use oriented in order to recognize full potential.

MFP Step 2: The conflicts and interrelationships of the MFP Step 1 recommendations are analyzed in depth, along with socio-economic factors. The impacts of the recommendations are accepted, rejected or modified as required to develop sets of recommendations which will result in management for multiple use--a "best mix." Public participation is most intense in this step of the planning process.

MFP Step 3: The information and analysis from MFP Step 2 is used to reach and record planning decisions for each of the major resource programs or categories in the planning area. Cumulative environmental impacts are summarized, map overlays prepared and a summary of the decisions publicized.

Public Participation. The public is involved throughout the planning process in order to insure sound information, identify major issues or problems and to help resolve conflicts in resource use. A variety of techniques are commonly used to include public input at three major periods; before planning begins, during the planning process, and notification of management decisions in the completed land use plan.

Activity Plans. After completion of the land use plan, specific projects and on-the-ground actions are prepared to implement provisions of the management decisions.

APPENDIX 1-B

CRITERIA USED TO DETERMINE ALLOCATIONS
FOR PROPOSED ACTION AND ALTERNATIVES

General Background

The allocation of forage to the grazing ungulates in the Challis Unit was made after the biological limits for the health of the plants was determined. The biological limits for the vegetation involved provided at least 50 percent of the vegetation for plant maintenance, non-game wildlife, and watershed needs in the proposed action and alternatives.

Proposed Action

After determining the biological limits of the vegetation involved, suitability standards for grazing were applied to determine available forage. Wild horse numbers were established by evaluating the extent the wild horse range could support horses, public input from planning meetings and current inventory of horses or 586 head. The limiting factor for a wild horse herd is the winter range (based upon the total wild horse range utilized at the time this document was initiated). The capability of the current wild horse winter range is to support 340 animals. Public input from planning meetings indicated a desired population of zero to the current level of 586 wild horses. The strongest or more prevalent suggestions are for the approximate number that were present at the time the Wild Horse and Burro Act was passed, or a range of 100 to 250 animals. After conflict analysis for competing use of the grazing resource was complete in the Challis Unit MFP, a maximum and minimum was established at 202 wild horses. To maintain a wild horse herd that would stay within the maximum level of 202 animals, the allocation was made for 80 percent (professional judgment estimate) of 202, or 162 wild horses.

Wildlife species specifically involved in the allocation process (deer, bighorn sheep, and antelope) except for antelope are mainly winter and spring residents only. Most winter use by these species (excepting antelope) is on areas that have been rated as unsuitable for livestock or which contain so little suitable area it has been determined impractical or economically unsound to justify livestock use (Wittinger, 1978). Use area determination for the large wild grazing ungulates was based on many years of aerial and

ground observation. Winter horse use has influence only on deer at the present. Twenty percent of the wintering deer population have occasional overlapping ranges with wintering horses. Spring use area overlap between the various potentially competing species was reconciled through competitive AUM analysis and MFP II decision. Antelope food habits essentially preclude winter forage competition. Spring/summer forage needs for antelope were accomodated through competitive AUM analysis and MFP II decision.

Practically all AUMs needed for present and future big game populations were allocated from areas unsuitable for livestock and wild horse grazing (7,435 AUMs). In those areas where dietary conflicts arose with livestock and/or wild horses, big game received first allocation to meet its needs (337 AUMs).

Cattle were allocated all forage determined noncompetitive to wild horses (at 162 head) and long term forage needs for big game. Herd Creek was allocated on the current AMP level of use for cattle.

Minimum Constraints on Livestock Alternatives

Livestock - Livestock AUMs were allocated all the forage on dietary/habitat overlap areas with wild horses and/or wildlife. All of the competitive AUMs were given to livestock. Twenty percent of the forage on slopes greater than 50 percent was also allocated to livestock. Herd Creek would remian as presently used.

Wild Horses - All noncompetitive AUMs in the critical horse wintering areas were given to the wild horses. All AUMs on low production areas (32 acre+/AUM) were allocated to the horses.

Wildlife - Practically all AUMs demanded by big game are found in areas unsuitable by both livestock and wild horses. The livestock did, however, receive all the AUMs in dietary overlap areas. Wildlife AUMs were reduced accordingly. Additional noncompetitive AUMs (1,103) on slopes over 50 percent were taken away from big game and allocated to livestock.

Maximize Wild Horses

Wild Horses - All AUMs horses could use (for 340 horses) based upon the critical wild horse wintering areas, were allocated. The wintering areas (critical) are the limiting factor.

Livestock - Livestock were given all the noncompetitive AUMs in horse areas by taking dietary and competitive overlap into consideration. In the non-wild horse allotments, livestock AUMs were allocated as in the proposed action. Herd Creek AMP and allowable AUMs would remain status quo.

Wildlife - Big game allocation was the same as in proposed action.

Maximize Wildlife

Wildlife - Big game allocation was the same as in the proposed action. All turnout dates would be held to June 15 for livestock to reduce early spring grazing conflicts, at least with livestock. Livestock use would also be eliminated from the bighorn sheep winter ranges.

Livestock - To reduce competition, turnout dates would be delayed until June 15. After calculating the dietary/habitat overlap areas with big game, the livestock received the remaining AUMs. In the wild horse areas, the proposed action mix based upon dietary and habitat overlap determined the allowable AUMs. See Proposed Action (A). An area of 31.8 square miles would be fenced to exclude livestock and horses from grazing to improve downstream siltation conditions in Road Creek and the East Fork River.

The Herd Creek Allotment would be allocated as present and the AMP would remain in effect.

Wild Horses - Wild horses allocated on the basis of their limited critical winter ranges and dietary overlap with livestock. All AUMs horses could use based upon the above were allocated to them.

Reduced Level of Grazing

Wildlife - Big game allocation was the same as in the proposed action.

Livestock - Allocation was made based upon BLM suitability criteria outlined in Washington Office Instruction Memorandum 78-134 (on file in the Idaho State and Salmon District Offices). In wild horse areas, the reduction in livestock use was based upon the percentage use by livestock and wild horses as presented in the proposed action.

Wild Horses - The range of horses to be managed was 75 to 100 animals. Any number less than 75 wild horses would probably develop a situation of widely dispersed animals which would lead to breeding problems (horses finding pastures).

APPENDIX 1-C

RATIONALE FOR SELECTING GRAZING SYSTEMS

At present, most all cattle use in the Challis Planning Unit is not restricted to any particular pasture or area. Some operators do move their cattle from one area to another during the grazing season, but generally the cattle roam at will over the allotments. Cattle use, therefore, is concentrated in the flattest terrain such as alluvial fans and drainage bottoms, and around or near water sources. This results in overuse of these areas.

Turnout dates on most of the allotments is May 1, with some operators turning out May 16. This has been traditional for many years. This continuous, year after year use of the range during the early stages of plant growth is detrimental to the plants (Stoddart et. al., 1975; Hormay, 1970; Laycock, 1967; Arizona Interagency Range Committee, 1972; Heady, 1975).

Stoddart, Smith, and Box (1975) state that:

"The first consideration in planning range use is to ensure that the basic plant and soil resources are used in such a way that they continue to be productive under the grazing system employed.

"The selection of a particular system will depend upon the kind of vegetation, the physiography of the range, the kind of animals, and the management objectives of the operator.

"Continuous grazing wherein livestock are placed on the range and allowed to remain yearlong or throughout the grazing season has been shown to result in undesirable successional changes in range forage. To prevent this, specialized systems of grazing management have been used widely. Although differing greatly in details, they have two features in common, a period of rest to allow forage plants to grow unmolested and a systematic grazing schedule among different parts of the range."

Those allotments proposed for rotation grazing systems generally have several things in common. Nearly all of them would receive substantial reductions in cattle use, from 40 to 70 percent for an average of 64 percent. About one-third of the range in some allotments is in poor condition, from 27 to 48 percent for an average of 35 percent. Some of them have large areas of poor condition range that is rated at above 32 acres/AUM. They each have the potential for improvement in range condition. Most of them have some developed water and have the potential for more.

With the short time allotted to complete the Challis Supplement, the proposed grazing systems in the Challis FES were examined. Much consultation has already been done with the operators in designing these systems, and a great deal of the preliminary work has been done on the proposed range improvement projects necessary to implement those systems.

The following is a list of each of the allotments proposed for grazing systems and reasons for proposing a grazing system on each:

Thompson Creek - For improvement of the range resource, an adjustment in the stocking rate is necessary. To gain improvement of a condition class within the proposed action time frame, additional management is needed that provides for a rest from early spring livestock grazing use. The diversity in elevation throughout the allotment negates establishing a rest rotation system. The allotment can be divided into three pastures and deterred rotation established.

Herd Creek - No reduction. This allotment has an implemented allotment management plan designed by the Forest Service. It has been in effect for only one cycle of the grazing system. It will be left as is for at least one more grazing cycle (3 years) and then evaluated to determine if adjustments are necessary.

Squaw Creek - The majority of this allotment is in poor condition. An adjustment in stocking rate is needed plus rest from early spring grazing. The allotment is too small to develop any system requiring more than two pastures. A deferred rotation system is proposed to allow early spring rest from livestock grazing.

Spud Creek - Over 30 percent of the allotment is in poor condition. Overstocking and early spring grazing are the major problems. The allotment is small making it impractical to divide into more.

Warm Springs - Almost 30 percent of the allotment is in poor condition. An adjustment in stocking rate is necessary and rest from early spring grazing to improve condition of the range. The spring-summer-fall grazing season makes it possible to establish a true rest rotation system. This is a large allotment (almost 60,000 acres) that cen be fenced into five pastures with 11 miles of fence. There is a seed source of the better native bunch grasses to provide a seed trampling treatment, a necessary feature in rest rotation.

Garden Creek - About 30 percent of the allotment is in poor condition. An adjustment in stocking rate is needed plus rest from early spring grazing. The allotment is large enough to

establish a four pasture grazing system with minimal (additional) fencing required. A rest rotation system can be established to provide the resting treatment; native plant species (bunch grasses) are present for seed source.

San Felipe - Almost one-half of this allotment is in poor condition. A rest treatment is necessary for this allotment in addition to a reduced stocking rate. The allotment is large (over 80,000 acres) and maintenance of so large an acreage in poor condition is unacceptable. Though fencing requirements (24 miles) is costly for development of a three pasture system, treatments must include a full grazing year rest to initiate the response needed for improved range condition within 15 years.

Bald Mountain and East Fork Allotments - Over one-third of these allotments are in poor condition. A reduced stocking rate is needed plus rest from early spring grazing. Three pastures can be established in each allotment with minimal fencing. The topographic features and seed source of native brush grasses are suitable for establishing a rest rotation system.

Seasonal Grazing - Red Lake, Road Creek, Bruno Creek, Round Valley, Split Hoof, Pine Creek and Sullivan Creek Allotments.

Seasonal grazing was proposed for the remaining allotments because systems requiring additional fencing are not feasible or economical. Reductions would not be as great as in the other allotments, averaging 37 percent. Some of the allotments are small or provide only a small amount of forage. Others have physiographic features which make rotation systems difficult. Some of the allotments have large areas that lack water or potential for water development, and some have large areas of inaccessible range due to steep slopes.

APPENDIX 2-A

METHODOLOGY FOR THE CHALLIS UNIT
VEGETATION INVENTORY AND FORAGE ALLOCATION

Vegetation Inventory

An ecological site and condition inventory was conducted in the summer of 1977 in the Challis Unit of the Salmon District of the Bureau of Land Management. The inventory was conducted following the guidelines set forth in the SCS National Range Handbook (1976).

A third order soil survey was completed in 1977 by the SCS on a contract basis. Soils were classified to the series and phase of series level. They were mapped as associations, consociations, and complexes.

The potential natural plant communities were identified and correlated with the soil survey. The production and species composition of the potential natural plant communities was determined by sampling and studying reference sites in the Challis Unit and by comparing them with samples taken in the Little Lost-Birch Creek area the same year on the same ecological sites and with existing SCS range site descriptions. Available literature, research, and personal knowledge of other specialists were reviewed. The ecological site descriptions are approximations of site potential based on the best available knowledge at the time of their writing.

Ecological condition was determined by comparing the present plant community and site conditions with that described for potential.

The vegetation production and species composition inventory consisted of two parts. First, 160 areas were sampled using the 10-plot double sampling technique. Samples were taken in all major ecological sites in their various condition classes in the Challis Planning Unit. These samples provided the quantitative base to begin the characterizations of the production on each site and species composition. They also provided training to the sampling crews so they could make acceptable estimates of production and species composition for condition class write up to determine ecological condition.

Approximately 1700 condition write ups were completed averaging about one per every 200 acres. Write ups were made in all ecological sites in their various condition classes in the Challis Planning Unit and are available in the district of the Bureau of Land Management in Salmon, Idaho.

Compilation of the inventory data involved portraying on maps the soil survey, ecological sites, and ecological condition class. Current vegetation types were identified within the condition classes from the plant data vegetation samples and condition writeups.

The average sample year production per acre for each ecological site by condition class and current vegetation was determined. Acreages were measured for the various ecological sites, condition classes and current vegetation types within a condition class (called strata). The acreage in each strata was multiplied by the production of that species in the strata. The production of all strata in an allotment is totalled to arrive at the total production in an allotment.

Forage Allocation

To make a more equitable apportionment of forage between the different grazing animals, it is deemed desirable to separate the allowable use factors into two components: (1) the plant's biological limit, and (2) animal preference of dietary requirement. The biological limit is the degree expressed in percent that a plant can be grazed or have its foliage removed without affecting its viability and capability to reproduce.

A biological limit factor is applied to each plant class. The biological limit factors are used to determine the total pounds of herbage that can be removed by a grazing animal. The herbage that can be removed by grazing animals (herbivores) is called forage. The amount of forage is determined for each type of plant (grass, forb, and shrub). Plants not normally grazed, except under extremely heavy use, are not included in this total.

The biological limit [1/] (percent) for each forage class (grasses, forbs, and shrubs) by season is as follows:

	Spring	Summer	Fall	Winter	Yearlong
Grasses	30	40	50	50	30
Forbs	25	25	25	25	25
Shrubs	30	30	30	30	30

A biological limit of 30% in the spring was used for grasses as these plants during this period have actually produced only a portion of their total production. Production figures reflect total production; therefore, the biological limit must be lower in the spring.

Biological limits for yearlong grazing was determined to be the same as in the spring as animals grazing yearlong cannot be controlled within a seasonal use area and grazing occurs as soon as plants begin to green up. Grazing at this time can cause a reduction in grass production. Grazing also occurs when most forbs and some grasses are covered with snow and are unavailable for use.

Where grazing use occurred in more than one season, a weighted biological limit was calculated based on seasonal use. Seasonal use determinations are based on the principal forage producers for most large herbivores in the Challis Planning Unit.

Diet preferences are also weighted where grazing occurs in more than one season or as in the case of horses, yearlong.

Dietary preferences [2] are shown below:

	Spring			Summer			Fall & Winter			Yearlong		
	Grass	Forb	Shrub	Grass	Forb	Shrub	Grass	Forb	Shrub	Grass	Forb	Shrub
Cattle	90	3	7	90	3	7	86	0	14			
Horses										78	14	8
Deer	44	8	48				12	5	83			
Antelope	25	25	50	5	40	55	5	5	90			
Elk	52	43	5				50	34	16			
Bighorn Sheep	3	3	94				84	9	7			

The pounds of forage [3] required to support various animals for one month is as follows:

Animal	Forage Required per Animal per Month [4]	Animals/AUM
Cattle	800	1.0
Horses	1,000	0.8
Sheep	200	4.0
Deer	126	6.3
Elk	258	3.1
Antelope	54	14.8
Bighorn Sheep	118	6.8

An example of how the above forage allocation procedures works on the Bruno Creek Allotment, which is presently grazed by cattle, elk, and deer, is shown below. The grazing period for livestock is May 15 to September 30 or 4.5 months. Sixteen elk and 125 deer use the area from April 1 to May 31 and from October 15 to November 30 or 3.5 months.

Total vegetation production in the Bruno Creek Allotment is 1,009,762 pounds. The following table shows this production by plant type, range suitability, and plant palatability.*

	Suitable		Unsuitable	
Plant Type	Palatable	Unpalatable	Palatable	Unpalatable
Grass	167,595	None	283,087	None
Forbs	66,976	26,677	73,642	105,674
Shrubs	178,847	None	107,292	6
Total	413,418	26,677	464,021	105,680

*The relish that an animal shows for a particular species, plant or plant part.

The palatable vegetation is used by cattle, elk, and deer; however, cattle are not allocated forage in the unsuitable areas whereas deer obtain 10 AUM's and elk obtain 20 AUM's of their forage from the area grazed by cattle. Only half of this use is competitive with cattle.

The balance of the forage required for elk and deer is obtained from the area unsuitable for livestock grazing. To determine the amount of forage available for allocation, the production of palatable vegetation is multiplied by the seasonal weighted biological limit. This is determined by multiplying the biological limit for each plant class by the amount of time (expressed as a percent) each season (spring, summer, fall) makes up of the total grazing period.

Example:

A grazing period of May 15 to September 30 consists of 1 spring month, 1.5 summer months and 2 fall months (1 month ÷ 4.5 months = 22%; 1.5 months ÷ 4.5 months = 34%; 2 months :4.5 months = 44%).

Using the biological limit of 30 and the season of use percentages calculated above, the weighted biological limit for grass is determined by (30 x .22) + (40 x .34) + (50 x .44) = .42. Since the biological limit for forbs and shrubs is the same for all seasons weighting is not necessary.

The pounds of available forage is determined by:

	Total Pounds Palatable Vegetation		Weighted Biological Limit		Pounds Available Forage
Grass	167,595	x	.42	=	70,390
Forbs	66,976	x	.25	=	16,774
Shrubs	178,847	x	.30	=	53,654

The pounds of forage required by class of plant to support the animals grazing in this area is then determined by multiplying the percentage each plant class makes up of the total dietary requirement for a given animal by 800 pounds of forage, which is defined as 1 Animal Unit Month.

	Weighted Dietary Requirement [a]	Pounds Forage Required per Animal Unit Month
Cattle		
Grasses	88	704
Forbs	2	16
Shrubs	10	80
		800 # forage/AUM

Elk

Grasses	50	408
Forbs	36	312
Shrubs	14	80
		800 # forage/AUM

Deer

Grasses	21	168
Forbs	6	48
Shrubs	13	584
		800 # forage/AUM

a/ Again where more than one season is involved, a weighted dietary factor is used and the same procedures are used as in determining the biological limit. The wieghted dietary requirement is determined as follows:

Cattle	Grass	(90 x .22) + (90 x .34) + (86 x .44) = 88
	Forbs	(3 x .22) + (3 x .34) + (0 x .44) = 2
	Shrubs	(7 x .22) + (7 x .34) + (14 x .44) = 10
Elk	Grass	(52 x .17) + (50 x .83) = 50
	Forbs	(43 x .17) + (34 x .83) = 36
	Shrubs	(5 x .17) + (16 x .83) = 14
Deer	Grass	(44 x .29) + (12 x .71) = 21
	Forbs	(8 x .29) + (5 x .71) = 6
	Shrubs	(48 x .29) + (83 x .71) = 73
		100

The maximum number of animals that can be grazed on this area is determined by dividing the pounds of forage produced by class of plant by the pounds of forage required per animal month. The plant class which produces the least number of AUM's for that animal is then the factor limiting the number of animals that can be grazed on the allotment.

Cattle

Grasses	70,390 ÷ 704 =	100 AUMs cattle
Forbs	16,774 ÷ 16 =	1,048 AUMs cattle
Shrubs	53,654 ÷ 80 =	671 AUMs cattle

A maximum of 22 cattle can graze the suitable area for 4.5 months (100 ÷ 4.5 = 22).

The limiting factor for cattle is grass.

Elk

Grasses	70,390 ÷ 408 =	172 AUMs for elk
Forbs	16,774 ÷ 312 =	54 AUMs for elk
Shrubs	53,654 ÷ 80 =	671 AUMs for elk

There are 54 AUMs available for elk use (54 AUMs x 3.1 Elk/AUM ÷ 3.5 months). Thus, a maximum of 48 elk can graze the suitable area for 3.5 months.

The limiting factor for elk is forbs.

Deer

Grasses	70,390 ÷ 168 =	419 AUMs for deer
Forbs	16,774 ÷ 48 =	349 AUMs for deer
Shrubs	53,654 ÷ 584 =	92 AUMs for deer

There are 92 AUMs available for deer use. A maximum of 166 deer can graze the suitable area for 3.5 months.

The limiting factor for deer is shrubs.

To determine the allocations for the proposed action and the alternatives, it was necessary to find the amount of competitive overlap between grazing animals. To calculate the number of AUM's of overlap between competing species of grazing ungulates, it is necessary to know:

a. The amount of use of the competing species which occurs in the overlap area in percent.

b. The forage demand (in AUMs) for the competing species in percent. This demand is only for the time when the competition is occurring, i.e., for deer the only demand recognized in this category is spring demand.

c. The amount of the overlap area which is suitable for livestock.

d. The seasonal dietary overlap in percent.

Example:

In this allotment, 90% of the deer use occurs in an area where there is an overlap between livestock and deer. The forage demand for deer is 15 AUMs. Of this overlap area, 70% is suitable for livestock. There is a 50% overlap in food habits between deer and livestock.

a = 90% b = 15 AUMs c = 70% d = 50%

The AUMs of competitive overlap = a x b x c x d = 5 AUMs of competitive overlap between livestock and deer.

Ninety-five percent of the elk use occurs on an area where there is an overlap between livestock and deer. The forage demand for elk under the proposed level is 31 AUMs. Of the overlap area, 70% is suitable for livestock. There is a 50% overlap in food habits between elk and livestock. Thus, a = 95% b = 31 AUMs c = 70% d = 50%. There are 10 AUMs of competitive overlap between livestock and elk.

For the proposed action, these competitive AUM's were subtracted from the maximum AUM's available for livestock. (For the procedure under other alternatives, see Appendix 1-B). So the AUMs for livestock under the proposed action would be 100 AUMs - 5 AUMs - 10 AUMs = 85 AUMs of livestock use.

FOOTNOTES

1/ Data for biological limits was obtained from personal knowledge of personnel of the Bureau of Land Management; from proper use tables in the district files; from BLM, SCS, and U.S. Forest Service Manuals; and from the following:

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4/ Methodology used to determine forage consumption rates for ungulates in the Challis Planning Unit.

Cattle

900 pound cow with calf = 9.00 cwt

9.00 cwt x 2.96 lbs/cwt/day = 26.8 lbs/day

1 month = 30 days x 26.8 lbs/day = 804 lbs/month

800 lbs/month = 1 Animal Unit Month (AUM)

Wild Horses

1000 pound horse = 10.00 cwt

10.00 cwt x 3.33 lbs/cwt/day - 33.3 lbs/day

1 month = 30 days x 33.3 lbs/day = 999 lbs/month

1000 lbs/month = 1 horse unit month

Bighorn Sheep

Hickey (1978) through contact with Thorne and the Wiskey Mountain Comprehensive Bighorn Sheep Management Plan indicate comsumption of 3.17 pounds/hundred weight (cwt)/day for bighorns. Hickes (from Thorne, 1978) indicated average weight of Challis Planning Unit bighorns to be approximately 124 pounds.

124 pound bighorn = 1.24 cwt

1.24 cwt x 3.17 lbs/cwt/day = 3.93 lbs/day

1 month = 30 days x 3.93 lbs/day = 118 lbs/month

118 lbs/month = 1 bighorn unit month

$\frac{800 \text{ lbs/AUM}}{118 \text{ lbs/bighorn UM}}$ = 6.8 sheep consume 800 lbs. of forage in one month

6.8 conversion factor: 1 AUM = 6.8 bighorn unit months

Antelope

Sundstrom et. al. (1973), Severson et. al. (1968) and information in the Pronghorn Antelope Bureau of Land Management Technical Supplement all contained consumptive rates for antelope that averaged 1.81 pounds of forage a day. In one month (30 days) this converts to 54 pounds of forage per month per antelope.

$\frac{800 \text{ lbs/AUM}}{54 \text{ lbs/antelope UM}}$ = 14.8 antelope consume 800 pounds of forage per month

The conversion factor is then 14.8 antelope UMs = 1 AUM

Mule Deer

A consumption rate of 3.1 pounds of forage per hundred weight for mule deer is supported by Doman and Rasmussen (1944), Hill (1956), Nichols (1938), Rasmussen and Doman (1943), Wallmo et. al. (1977) and Richens (1967).

An average weight of mule deer was done by using a weighted average for deer herds in the area based on age and sex classification data. This weight was 135 pounds per deer.

3.1 lbs. forage/cwt x 1.35 cwt = 4.2 lbs. of forage consumed per deer per day

4.2 lbs/deer/day x 30 days = 126 lbs. of forage per month/deer

126 lbs. of forage = 1 deer UM

$\frac{800 \text{ lbs/AUM}}{126 \text{ lbs/deer UM}}$ = 6.3 Deer UMs/AUM

6.3 is the conversion factor 1 AUM = 6.3 deer UMs

Elk

Consumption rates for age and sex classes from Nelson (1978) are:

Calves	2.5 lbs. of forage/cwt.
Cows	2.0 lbs. of forage/cwt.
Yearlings	2.3 lbs. of forage/cwt.

These rates are from the manuscript for the Revised Elk of North America. Data supporting these rates are from Murie (1951) whose rates are slightly higher, Robbins (1978) is lower with "hot" feeds, Greer (1978) is the same and Thorne et. al. (1976) rates pregnant cows nearly the same.

Greer (1978) and Boyd (1970) note winter weights of age and sex classes as follows:

Calves	250 pounds
Cows	500 pounds
Yearlings	350 pounds

Based on the composition of the Challis Planning Unit elk herds which contain very few bulls, 40 calves/100 cows and 50/50 sex ratio in calves and yearlings, we generate the conversion factors as follows:

A herd with 40 calves/100 cows and no bulls is comprised as follows:

	Average Weight	Consumption Rate
29 Calves	250 lbs.	2.5 lbs/cwt/day
56 Cows	500 lbs.	2.0 lbs/cwt/day
15 Yearlings	350 lbs.	2.3 lbs/cwt/day

Number/Age Class x Consumption Rate x (Average Weight ÷ 100) = Total Forage per Day per Age Class

$29 \text{ calves} \times 2.5 \text{ lbs/cwt} \times \frac{250}{100} = 181.25$ lbs/day consumed by calves

$56 \text{ cows} \times 2.0 \text{ lbs/cwt} \times \frac{500}{100} = 560$ lbs/day consumed by cows

$15 \text{ yearlings} \times 2.3 \text{ lbs/cwt} \times \frac{350}{100} = 120.75$ lbs/day consumed by yearlings

Therefore, 100 animals consume 861 pounds of forage every day or an average animal in a herd of cows, calves and yearlings with a 40 calf/100 cow ratio would consume 8.61 pounds of forage per day.

8.61 x 30 days = 258.3 lbs. consumed per month per elk

$$\frac{800 \text{ lbs/AUM}}{258.3 \text{ lbs/elk UM}} = 3.09 \text{ Elk UMs/AUM}$$

APPENDIX 2-B

CLIMATE AND 1977 HERBAGE PRODUCTION IN THE CHALLIS INVENTORY AREA

Introduction

Climate and 1977 production was evaluated to determine approximately what an average herbage production level would be for the various ecological sites in the Challis area.

Herbage yield and species composition of plant communities exhibit considerable fluctuation and variation from year to year because of varying weather conditions. To properly evaluate the productive potential of specific areas, it is necessary to differentiate between vegetative differences which are the product of inherent site differences and those which are more properly associated with variables in weather conditions during the year that herbage evaluations are made.

Literature Review

Several studies have been made showing close relationships between climate and range herbage production. Blaisdell (1958) found some very significant correlations of precipitation and temperature to herbage phasic development (phenological stage), height growth, and weight production near Dubois, Idaho.

Temperature was found to have the strongest effect on start of growth and phasic development, while precipitation was the dominant climatic factor correlated with herbage production. However, precipitation was more closely correlated with total production, or groups by life form class than with individual species. This would indicate that the community and not the individual plant species was in equilibrium with moisture supply.

He found that the precipitation prior to the growing season (July through March), had a greater influence on herbage weight than precipitation during the growing season (April, May and June). The chief effect of the pre-growing season precipitation was the assurance of soil moisture during the period of active plant growth (April, May and June). June precipitation was not found effective in increasing herbage production. High herbage weights were best correlated with high July through March precipitation and with cooler April through May temperatures. The converse was found to occur also. Several authors cited in Blaisdell's study indicated that above normal temperatures accelerated phasic development of plants.

Early or rapid phasic development did not necessarily mean early attainment of high weight yields, rather the opposite. The early or rapid phasic development was associted with the warmer, drier April, May or June period, which was also the conditions for

the lower production years. Some relationships between herbage weight and stage of development were found however.

Bluebunch wheatgrass averaged 66% of its herbage weight and 83% of its height growth when flower stalks first appeared (just coming out of boot stage). When the heads were fully out, 90% of its herbage weight and 97% of its height growth were achieved. At full bloom 97% of weight production and 100% of height growth were achieved. Attainment of particular percentage level of weight production was approximately 10-12 days behind the same percentage level of height growth.

Blaisdell stated that since plant production seemed chiefly dependent upon the number of shoots, conditions during the period of shoot initiation should be more related to production than condition during the growing season.

Sharp (1970) found that the amount and distribution of April, May and June precipitation largely determines the annual forage production. Soil and air temperature were considered important during the period of favorable soil moisture. Between 70 and 80 percent of the year to year variation in production was attributed to the April, May and June precipitation.

Sneva and Hyder (1962) developed formulas to predict herbage yield based on "crop year" precipitation rather than calendar year precipitation. Since July and August precipitation is normally low and has little effect on herbage production, they chose September through June as the "crop year" precipitation period.

Since all the variables of weather are interrelated in their effect on herbage growth and production, it would seem that neither precipitation nor temperature alone will always be a reliable index to herbage production on a given soil. Lull and Reinhart (1955) found that soil moisture availability is a more accurate index to the effectiveness of precipitation than the precipitation record itself.

Other authors have used calculated actual and potential evapotranspiration for estimating potential plant growth. Arkley and Ulrich (1962) developed a simplified method for calculating actual evapotranspiration and the water balance of the soil as a means of predicting plant growth potential. Potential evapotranspiration can be readily calculated from monthly mean temperatures by means of tables and nomograms now available in the literature. Actual evapotranspiration is calculated from potential evapotranspiration by taking precipitation and the water holding capacity of the soil into account. Actual evapotranspiration is used in Arkley's and Ulrich's paper in the same sense as by Thornwaite (1958). It refers to a calculated value and does not imply any real measurement. The principle is to evaluate the limitation on plant growth due to either temperature or moisture.

This procedure assumes that no runoff or deep percolation beyond the depth of rooting occurs until the entire root zone is filled (water-holding capacity). Apparent water losses from these and other sources or water added from other sources (run-in, etc.) should be added or subtracted from precipitaiton before calculating the water balance.

Hugie Passey (1959) made an assessment of the relationship of calculated actual evapotranspiration and production on several sites in Idaho and found some close relationships. These relationships were approximations but showed considerable promise as a means of evaluating certain vegetative responses to weather variables.

Rosenzweig (1968) used evapotranspiration or water budget criteria to predict annual above ground productivity in plant communities ranging from deserts to tropical forests. He found evapotranspiration to be a highly reliable predictor. He suggested that the high correlation of evapotranspiration and productivity is due to the fact that this measures the simultaneous availability of water and solar energy, the most important rate-limiting resources in photosynthesis.

Discussion

The 1976-77 precipitation year for the Challis area was unusual. It was an extremely dry winter and early spring followed by average to above average precipitation in late spring and early summer. This compounded the problem of the normal variability encountered when relating herbage production to climate.

1977 herbage production was primarily a result of precipitation during the growing season, rather than available moisture as a result of winter precipitation. This is evident when precipitation records for area weather stations are analyzed for the winter period October 1976 to March 1977. Precipitation ranged from a low of 20% of normal to a high of 43% of normal. The average during this period was 28% of normal.

The Challis, May, Mackey Ranger Station, Salmon, and Chilly Barton Flat weather stations were used for climate analysis. All stations appear to relate well to the Challis inventory area. The Sun Valley station was initially considered but did not appear to relate well to the inventory area. Sun Valley is primarily a winter precipitation area whereas precipitation is really equally divided between the growing season and winter at the other stations. All of the above stations are within 65 miles of the Challis inventory area.

Actual evapotranspiration, (ETa) comparisons for 1977 with long-term average were made for these weather stations using the procedure as described by Arkley and Alrich (1962). Table 1 summarizes these comparisons.

It is recognized that this approach is limited by the lack of several years production data and more accurate weather data for each specific ecological site. However, some reasonable analysis was needed to assess 1977 herbage production levels. ETa calculations made for the appropriate time periods of "crop year" and parts of the crop year rather than calendar year appeared to be as realistic as any that are available. Picking the appropriate crop year or part of crop year precipitation to reflect growth potential for 1977 or any year is important. No adjustments were made for runoff, deep percolation, or evaporation losses. The losses to these factors were assumed to be consistant from 1977 to long-term average for purposes of these calculations.

The following ETa analysis was made: Apparent soil moisture going into the growing season (April 1) was 15-45% of normal, with the Challis station at 15% of normal and Chilly Barton Flat at 16% of normal. This is a direct result of the dry, open winter of 1976-77. The average of the five stations was 25% of normal. April, May, and June ETa analysis was likely the most indicative for 1977 herbage production. The ETa values ranged form 60-90% of normal for the five weather stations with an average of 78% and median of 76% of normal.

The ETa values for July are well above average. However, it is doubtful if the precipitation during that period would have added much weight growth, but instead may have extended the green period and quality of the herbage.

Most of the grasses were at seed ripe from 7/15 to 8/1 (Challis phenlolgy data). They were in the boot stage from 5/15 to 6/1. Full bloom would have been prior to July 1. Previous studies (Blaisdell 1958) have shown that 90-97% of herbage weight was achieved by bluebunch wheatgrass at full bloom. It is likely that other grasses respond similarly.

For herbage production to be increased as a result of the July precipitation and indicated ETa, new shoot initiation would have to develop and moisture remain sufficient to extend their growth. Shoot initiation on native cool season plants is best in cool-moist conditions. The high tempertures of July would have limited this somewhat.

Another factor for this rationale comes from the sampling data taken. Sampling began approximately June 20, 1977 and continued through August 30, 1977. Approximately 30 rechecks were made in late July and early August to see if corrections were needed to adjust earlier samples for increased growth. No corrections were needed.

The October 1976 through June 1977 ETa values range from 56% normal to 89% of normal with an average of 77% and a median of 73% of normal. These values compare very well with the April, May, and June period.

The ETa values both for the growing season (April, May and June) and the "crop year" October 1976 - June 1977 indicate potential for plant growth could have been from approximately 60% to 90% of normal. Some other considerations were important in the climate and production analysis.

Low soil moisture going into the growing season may diminish the effectiveness of the moisture that comes from plant growth. It may move through the soil profile faster and be more subject to evaporation losses.

An open winter leaves plant crowns exposed to temperature extremes, which combined with the low soil moisture may have damaged existing buds thus reducing growth potential when growth did start.

In April 1977 plants were in drought stress and air temperatures were above average (110-115% of normal). This would not have been conducive to good shoot initiation and tillering plants. Plants went into May with very little growth. May moisture was sufficient to start or add plant growth. ETa for May was 72% - 113% of normal with an average of 82% of normal. May temperatures were slightly below average (91-98% of normal).

June ETa was 82% - 116% of normal with an average value of 93% of normal. June temperatures were 110% of normal. Indicated growing conditions for June were approximately average but plants coming out of drought stress, had a lack of tillering and were probably going through rapid phasic development.

This climate and production analysis for 1977 in the Challis inventory area is approximate. Using existing data in a very short time period the best professional judgment is that plant growth potential could have been from 60-90% of normal. Average and median values for this range are 78% and 76% for April-June and 77% and 73% for October-June respectively.

A management decision was made to adjust 1977 sample year production upwards 25% to approximate average herbage production levels. It was also decided to make initial stocking rate estimates based on approximate average herbage production.

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APPENDIX 2-B

CHALLIS ES AREA - CALCULATED ACTUAL EVAPOTRANSPIRATION DATA
FOR THE PERIOD OCTOBER, 1976 - SEPTEMBER, 1977

Weather Station	% of Normal Soil Moisture 4/1 [1]	Percent of Normal										% of Normal PPT 10/76-3/30/77
		ETa [2] Oct-Sep	ETa Oct-June	ETa Apr-June	ETa April	ETa May	ETa June	ETa July	April Temporary	May Temporary	June Temporary	
Challis	15	85	56	62	36	72	82	267	110	92	109	20
May	41	107	75	78	63	76	93	416	110	93	111	35
Mackay R.S.	24	99	86	90	66	76	116	233	113	93	110	23
Salmon	31	122	89	90	63	113	83	352	110	98	110	43
Chilly Barton Flat *(data incomplete Nov. & June)	16	95	79	68*	42	77	*	232	114	91	*	20

1/ Calculated from available soil water holding capacity and precipitation. No allowance made for water lost to evaporation or runoff.

2/ ETa = Actual Evapotranspiration (calculated).

APPENDIX 2-C

SUMMARY OF RANGE SUITABILITY CRITERIA
USED IN DEVELOPING PROPOSED ACTION

The following criteria was used for determining which areas are suitable for livestock grazing.

1. All areas with slopes 0-20 percent where the distance from water is less than four miles.

2. All areas with slopes between 21-30 percent where the distance from reliable water is 0.6 miles or less.

3. All areas with slopes between 31-40 percent where the distance from reliable water is 0.4 miles or less.

4. All areas with slopes between 41-50 percent where the distance from reliable water is 0.3 miles or less.

5. All areas with slopes between 0-50 percent where water can be developed from a known source either on or off-site and within the distance criteria in 1 through 4 above.

6. Forty percent of the forage on areas with slopes between 0-50 percent that have no known on-site water source, but where water could be developed using present technology.

Rationale for using this criteria is as follows:

1. Seasonal intermittent water is available in draws in the spring when most allotments are being used. When intermittent water is not available, livestock revert to the permanent waters.

2. In the Challis area, cattle have become accustomed to a regularly reoccurring movement pattern from the ranch to summer range in the spring and from summer range to ranch in the fall. Cattle familiar with the area have a desire to migrate to their seasonal ranges just as wildlife do. This desire causes them to travel on and graze slopes that they would not otherwise negotiate. Cattle unfamiliar with the area which have not experienced this movement pattern tend to stay in the flatter areas. This movement pattern is supported through observation of BLM personnel and livestock operators.

3. Most allotments are grazed during the spring and fall. Livestock tend to range further from water in cool weather and will also graze steeper slopes. This observation is supported by observations of BLM personnel and of livestock operators.

4. Locating salt away from water also causes cattle to range further so that the distance from water on slopes less than 50 percent does not always apply.

5. The above criteria allocates forage to cattle on the areas presently being used by cattle as is indicated by the present range condition ratings for these areas.

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APPENDIX 2-D

DETERMINATION OF BIOLOGICAL LIMITS FOR GRASSES, FORBS, AND SHRUBS OF THE CHALLIS PLANNING UNIT

In order to determine biological limits for grasses, forbs and shrubs of the Challis Planning Unit, a literature survey was conducted. Since bluebunch wheatgrass (Agropyron spicatum) is the predominant grass species in the Challis Unit, we keyed in on this plant in setting our Biological limits for grasses. For this purpose animal preference did not have to be taken into consideration, since it is one of the most preferred species in the area.

Hyder (1953, 1954) felt that a Proper Use Factor for bluebunch wheatgrass should be 50%. Heady (1950) found that clipping bluebunch wheatgrass to a six inch stubble (which represented 38-58% utilization, depending upon the plant) during the flowering stage was too severe. Mueggler (1975) found that clipped to 50% on 13 July, bluebunch wheatgrass did not recover to its initial vigor after five years of rest. It should be remembered that the effects of grazing are normally more severe than the effects of clipping to the same height (White, 1973). Thus a 40% Bio-limit is reasonable for summer use.

Idaho fescue (Festuca idahoensis) is probably the second most important grass in the Challis Unit. Beetle, et. al., (1961) found that a utilization of 45% in the summer resulted in decreased production, vigor, and range condition. Thirty-three percent utilization did not harm vegetation in a study by Ratliff and Reppert (1974). Mueggler (1975) found that Idaho fescue clipped back to 75% took five years of rest to recover. Again, the 40% summer Bio-limit is reasonable.

Cook and Stoddart (1963) did a study in an area which is similar to the Antelope Flat-Bradbury Flat Area. They found that both Indian ricegrass (Oryzopsis hymenoides) and bottlebrush squirreltail (Sitanion hystrix) could withstand 50% utilization in the winter, but not as much as 60%. They also found that utilization greater than 30% in the spring or summer would result in decreased vigor. Again, the Bio-limit of 40% for summer use is reasonable.

Spring use is much harder on grasses than summer (McIlvanie, 1942). For this reason, a Bio-limit of 30% was used for spring use. After the grasses have matured, they can be harvested more heavily without damaging the vegetation (Danbenmire, 1940). Thus, a Bio-limit of 50% was used for fall use.

There are very few studies on the effects of different levels of harvest on shrubs and forbs. Cook and Stoddart (1963) found that 30% was the proper level at which to harvest big sagebrush (Artemisia tridentata). For this reason, the Bio-limit for shrubs was set as 30% year-round.

Beetle, A. A., W. M. Johnson, R. L. Lang, Morton May and D. R. Smith. 1961. Effects of Grazing Intensity on Cattle Weights and Vegetation of the Bighorn Experimental Pastures. Wyoming Agricultural Experience Station Bulletin 373, 23 p.

Cook, C. Wayne, and L. A. Stoddart. 1963. The Effect of Intensity and Season of Use of the Vigor of Desert Range Plants. J. Range Management, 16:315-317.

Danbenmire, R. F. 1940. Plant Succession Due to Overgrazing in the Agropyron Bunchgrass Prairie of Southeastern Washington. Ecology, 21:55-64.

Heady, H. F. 1950. Studies on Bluebunch Weatgrass in Montana and Height-Weight Relationships of Certain Range Grasses. Egol. Mongra., 20:55-81.

Hyder, D. N. 1953. Grazing Capacity as Related to Range Condition. J. Forestry, 51:206.

Hyder, D. N. 1954. Forage Utilization. J. Forestry, 52:603-604.

McIlvanie, S. K. 1942. Carbohdrate and Nitrogen Trends in Bluebunch Wheatgrass with Special Reference to Grazing Influences. Plant Physiol, 17:540-557.

Mueggler, W. F. 1975. Rate and Patterns of Vigor Recovery in Idaho Fescue and Bluebunch Wheatgrass. J. Range Management, 28:198-204.

Ratliff, R. D. and J. N. Reppert. 1974. Vigor of Idaho Fescue Grazed Under Rest-Rotation and Continuous Grazing. J. Range Management, 27:447-449.

White, Larry M. 1973. Carbohydrate Reserves of Grasses: A Review. J. Range Management, 26:13-17.

APPENDIX 2-E

ECOLOGICAL SITE DESCRIPTIONS
CHALLIS PLANNING UNIT

The following ecological site descriptions apply to specific areas where a definite soils and vegetation relationship occurs. In some instances these sites occupy a very small geographic area and two or more distinct ecological sites may be intermingled together in a complex. When this situatiion occurs, it is very difficult to identify each ecological site on a small scale map. The vegetation map contained in this document may not be directly related to the ecological site descriptions because two or more sites may have been combined into one vegetation type on the map. Detailed maps and data calculations for each ecological (range) site are available at the Salmon District Office of the BLM. Forage allocations were based on actual vegetation clippings in each site and not on the ranges of forage production presented in each ecological site description.

APPENDIX 2-E

ECOLOGICAL SITE DESCRIPTIONS
CHALLIS PLANNING UNIT

Site Name: Semiwet Meadow - Carex

A. Physical Characteristics

1. Physiographic Features

This site occurs in mountain valleys, and on valley bottoms, flood plains, low lake terraces and alluvial fans near water courses. Slopes are from nearly level to gently sloping, from 0 to 10 percent, but mostly less than 3 percent. Elevation ranges from 4,200 to 7,500 feet.

2. Climatic Features

a. The climate is characterized by cold winters and warm dry summers. Average annual precipitation varies from 10 to 16 inches. Approximately 40% of annual precipitation comes in the plant dormant period (October-March) and 60% during the plant growing season (April-September). May and June usually receive 25% of the annual precipitation.

b. Plant growth begins about May 1 to 15, and grasses and forbs usually mature by July 15. The optimum plant growth period is from May 15 to July 15. Plant growth usually slows down during late July and early August due to warm temperatures, and as soil moisture becomes depleted. Forst-free period varies less than 65 to 160 days at various locations. In years of adequate moisture, plants grow until about October 1 to 10 when killing frosts occur.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is Sedge and Sod Wheatgrass. Composition by weight is approximately 80 percent grass and grass-like plants, 15 percent forbs and 5 percent shrubs.

b. Location of Typical Example of Site:

NW¼, NW¼, Sec. 25, T. 11 N., R. 25 E., Custer County, Idaho.

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac Air Dry	kg/ha Air Dry
Grasses & Grass-like Plants		60-95	875-1445	
Wild Rye	ELYMUS	5-10	75-150	
Mountain Brome	BRCAC	10-15	150-225	
Sedge	CAREX	25-35	350-520	
Tufted Hairgrass	DECA	5-10	75-100	
Kentucky Bluegrass	POPR	0-1	0-15	
Sod Wheatgrass	AGROP	20-30	300-445	
Alkalai Sacaton	SPAI	0-1	0-15	
Other grasses		0-5	0-75	
Forbs		0-25	0-300	
Rocky Mtn. Iris	IRMI	0-5	0-75	
Geranium	GERAN	0-5	0-75	
Clover	TRIFOL	0-5	0-75	
Other forbs		0-5	0-75	
Shrubs		1-28	15-420	
Willow	SALIX	0-5	0-75	
Woods Rose	ROWO	0-5	0-75	
Rabbit Brush	CHRYS	0-5	0-75	
Shrubby Cinquefoil	POF4	0-5	0-75	
Other shrubs		1-8	15-120	

Total Annual Production:

Favorable years - 1800
Median years - 1100
Unfavorable years - 650

1/ The Range in percent composition and production relate to the dynamics within the plant community and the annual fluctuation due to favorable and unfavorable growing seasons.

c. Vegetation cover varies from 65-80% by Ocular estimates.

d. Variations

Plant species not a part of the climax plant community that are most likely to invade the site if plant cover

deteriorates are cheat grass, foxtail barley, annual forbs, dandelion, sagebrush, rabbit brush and snake weed. If excessive grazing occurs, rushes and sedges will increase and may become dominant plants. Transition zones between this site and other sites may have plant species typical of both sites.

4. Soils

a. The soils in this site are deep and affected by wetness. The water table fluctuates between 20 to 40 inches until the later part of the growing season when the soil may dry out. Surface soils are generally dark colored and high in organic matter content. Textures of these soils range from fine sand to clay, but are most commonly medium and moderately fine. Parent materials are a wide range of parent rock and Lucustrine sediments. Roots and water move readily through these soils above the water table. Erosion is not a serious hazard on these soils.

b. Typical Soil Series are:

Typic cryaquolls

B. Interpretations

1. Livestock Grazing

Grazing animals tend to concentrate on this site because of its close proximity to natural water and the protection, shade and high quality forage provided by the riparian vegetation. Care must be taken when allowing livestock free access to the site in order to prevent stream bank and riparian habitat damage through natural concentration of livestock in these areas. If heavy grazing is allowed, rushes and sedges will increase and may become the dominant plants.

2. Wildlife

This site provides high quality yearlong habitat to upland game and non-game wildlife species. Sage grouse will utilize these areas for succulent vegetation during the summer. Rabbits, doves, songbirds and small mammals are abundant on this site due to the proximity to water and cover afforded by the stream bank vegetation. Furbearers, including beaver, muskrat and mink utilize this site yearlong.

Waterfowl and waterbirds rest in spring and summer and rest during migrations on this site. Small populations remain during mild winters. Raptors and carnivorous mammals hunt on this site.

Big game animals, including mule deer, elk, antelope and moose, utilize this site for water and succulent feed during the summer. Shrubs provide high quality feed and thermal cover to big game animals and rabbits during the winter.

3. Threatened or Endangered Plants and Animals

   a. Cryptlantha interrupta

   b. Lesquerella carinata

   c. Hymenopappus filifolius, var. idahoensis

4. Relative Forage Quality[2/] of the Potential Natural Plant Community

Cattle, Elk, and Horses

Preferred	Desirable	Undesirable
Sod wheatgrass	Basin wildrye	Willow
Mountain brome	Sedge	Rocky Mountain iris
Kentucky bluegrass	Geranium	Alkalai sacaton
Clover		Woodrose
		Shrubby cinquefoil

2/ Considers animal preference, palatability, nutritive value and availability based on field estimates and existing utilization data. It does not place an ecological value on plant species place in the plant community. It should be noted that forage preferences change depending upon state of growth, season of use, and the particular year.

Sheep, Deer, and Antelope

Preferred	Desirable	Undesirable
Mountain brome	Sod wheatgrass	Wildrye
Sedge	Geranium	Alkalai sacaton
Kentucky bluegrass	Willow	Rocky Mountain iris
Clover	Woods rose	Shrubby Cinquefoil
	Rabbit brush	

5. Seeding

This site is adapted to range seeding. Soil moisture is adequate most of the time, and high production can be achieved

with management. Two limitations to seeding are severe competition from sedges or rushes and the high water table. Stream banks should not normally be disturbed by seeding operations (for improvement techniques, see Idaho SCS Meadow Improvement Handbook).

6. Brush Management

This practice is not normally needed or desired on this site.

7. Topography

This site is on gently sloping stream bottomlands or land immediately adjacent to the streams. The terrain does not hinder movement of livestock or wildlife.

Site Name: Gravelly Loam
13 to 16" ppt. (33 to 40 cm) - ARTRV/AGSP
- Mountain big sagebrush/
Bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial foothill areas and steep mountain slopes. Slopes range from 10 to 50 percent. It occurs on all aspects and elevation ranges from 6,000 to 8,000 feet (1840 to 3450 m). At the lower elevations, it occurs on the north and east slopes or in depressions, and at the higher elevations it can occur on south and west slopes.

2. Climatic Features

a. Annual precipitation of this site ranges from 13 to 16 inches (33 to 40 cm). Approximately 40 to 50 percent comes in the winter dormant period (October-March) and 50 to 60 percent during the plant growing season (April-September). May and June usually receive 25 to 30 percent of the annual precipitation.

b. Plant growth period begins from April 15 to May 1, and grasses and forbs are usually matured by August 1 to 15. Grasses may green up again if fall rains are sufficient. Shrubs continue to grow during the summer dormant period, but at a reduced rate. The optimum plant growth period is from May 15 to July 1. The average frost-free period is 50 to 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is mountain big sagebrush and bluebunch wheatgrass. The composition is approximately 55 to 65 percent grass, 5 to 15 percent forbs and 20 to 30 percent shrubs by weight.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	kg/ha Air Dry
Grasses		55-60	250-600	280-673
Bluebunch wheatgrass	AGSP	40-50	150-450	168-502

Idaho fescue	FEID	5-15	35-100	39-112
Nevada bluegrass	PONE3	1-3	5-25	6-28
Sandberg bluegrass	POSE	2-5	10-50	11-57
Bottlebrush squirreltail	SIHY	T-1	T-10	T-11
Prairie junegrass	KOCR	2-5	10-50	11-57
Needle-and-Threadgrass	STCO4	T-1	T-10	T-11
Sod wheatgrass	AGROP	0-2	0-10	0-11
Forbs		5-15	35-100	39-112
Arrowleaf balsamroot	BASA3	3-10	25-75	28-84
Locoweed milkvetch	ASTRA	1-2	5-20	6-22
Death camas	ZYGAD	T-1	T-10	T-11
Musk phlox	PHMU	1-2	5-20	6-22
Rose pussytoes	ANRO2	1-2	5-20	6-22
Indian paintbrush	CASTI	1-2	5-20	6-22
Tailcup lupine	LUCA	T-2	T-20	T-22
Sego lily	CANU	T-1	T-10	T-11
Hoods phlox	PHHO	1-5	10-50	11-57
Longleaf phlox	PHLO	0-2	0-10	0-11
Other perennial forbs	PPFF	1-2	5-10	6-11
Erioginum	ERIOG	T-1	T-10	T-11
Shrubs		20-30	150-350	168-392
Mountain big sagebrush	ARTRV	15-25	150-350	168-336
Grey horsebrush	TECA	1-2	5-10	6-11
Prickly gilia	LEPU	1-2	5-10	6-11
Shrubby eriogonum	ERIOG	1-2	5-10	6-11
Tall green rabbitbrush	CHIV8	1-2	5-10	6-11
Rubber rabbitbrush	CHNA2	T-1	T-10	T-11
Twistedleaf rabbitbrush	CHVIP	T-1	T-10	T-11
Plains prickly pear	OPPO	T-1	T-10	T-11
Threetip sagebrush	ARTR4	T-3	T-25	T-28
Antelope bitterbrush*	PUTR2	T-5	T-50	T-47

Total Potential Annual Production:

Favorable Years	1000 lbs/ac air dry (1121 kg/ha)
Median Years	600 lbs/ac air dry (673 kg/ha)
Unfavorable Years	350 lbs/ac air dry (392 kg/ha)

*Bitterbrush can become equally dominant with mountain big sagebrush in some areas.

1/The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 30 to 40 percent.

d. Variation

In more gravelly sites or where gravels are closer to the surface, the threetip sagebrush/bluebunch wheatgrass site becomes more dominant. In more gravelly sites at the lower precipitation range, the Wyoming big sagebrush/bluebunch wheatgrass site becomes more dominant. Transition zones exist between these two sites and this site. Plant species typical of all these sites will be found in the transition zones. This must be considered when determining ecological condition.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. Soils are deep to moderately and well drained. Permeability is moderate. Gravels, cobbles and/or stones often exceed 50 percent by volume in the soil profile.

b. Typical soils series are:

Little Lost-Birch Creek	Challis
Surret loam	Sleep
	Stupile
	Klug dry phase
	Sink moist phase
	Gelkie
	Vaysa dry phase
	Surret
	Hoodle dry phase
	Vano

5. Location of Site

a. Typical example:

SE¼SE¼, Sec. 6, T. 11 N., R. 26 E.

b. Counties occurring in:

Custer
Butte

B. Interpretations (Potential Importance of Major Uses)

1. Livestock Grazing

This site is best adapted for livestock grazing in the late spring, summer and fall. Natural water supplies can be short at times, but the site is generally suitable from a water standpoint.

If the range condition declines through livestock grazing, the sagebrush will increase and the bluebunch wheatgrass will decrease. In poor condition, the visual aspect is mountain big sagebrush with a sparse understory.

2. Wildlife

This site provides yearlong pronghorn habitat with important use occurring in spring and summer. Antelope fawning is heavy in this area. Sage grouse strutting, nesting and brood-rearing occurs on this site. Deer, bighorn sheep and elk winter use is heavy in specific areas.

Many small mammals utilize this habitat yearlong. Numerous non-game bird species nest and summer on this site. Raptors nest and hunt throughout this site, and carnivorous mammals hunt here. The mountain big sagebrush provide food and cover for most of the wildlife during specific seasons.

Succulent grasses and forbs provide high protein feed in the spring and summer. The wildlife populations on this site are dependent on the high degree of vegetative diversity afforded by the relatively high precipitation.

This is one of the few sites in the Challis area containing antelope bitterbrush.

3. Recreation Value and Natural Beauty

The major recreation activity of this site is antelope hunting with some sage grouse hunting and rockhounding. Limited

camping opportunity exists adjacent to stream bottoms, and at Squaw Springs, in the Little Lost area, the site is open space with smooth to rough terrain, varied slopes and moderately high brush vegetation. Corral and Horse Basin in the Challis area are good sightseeing areas for wild horses.

4. Threatened or Endangered Plants and Animals

None known.

5. Relative Forage Quality

Common Name	* Cattle	Domestic Sheep	1 Wild Horses	2 Mule Deer	Elk	Antelope	Bighorn Sheep
Grasses							
Bluebunch wheatgrass	H	M	H	H	H	L	H
Idaho fescue	H	H	H	M	M	?	M
Nevada bluegrass	M	H	M	?	?	?	-
Sandberg bluegrass	L	H	M	H	M	M	L
Bottlebrush squirreltail	L	L	L	L	L	L	-
Prairie junegrass	M	H	M	L	M	?	-
Needle-and-Threadgrass	H	L	L	L	M	L	L
Sod wheatgrass	H	M	M	?	?	?	-
Forbs							
Arrowleaf balsamroot	L	H	-	M	M	L	-
Locoweed milkvetch	-	-	L	L	L	L	-
Death camas	-	-	-	L	?	?	-
Musk phlox	-	-	-	L	L	?	-
Rose pussytoes	-	-	-	L	L	L	-
Indian paintbrush	-	-	-	L	L	?	-
Tailcup lupine	-	L	L	M	H	L	-
Sego lily	L	L	-	?	L	?	-
Hoods phlox	-	-	M[3]	L	L	?	-
Longleaf phlox	-	-	M[3]	L	L	?	-
Eriogonum	L	L	L	L	L	L	L
Shrubs							
Mountain big sagebrush	-	L	L	H	M	M	M

Grey horsebrush	-	L	-	L	L	?	-
Prickly gilia	-	L	-	L	L	?	L
Shrubby eriogonum	L	L	-	L	L	M	L
Tall green rabbitbrush	-	L	L	M	M	M	L
Rubber rabbitbrush	-	L	L	M	M	M	-
Twistedleaf rabbitbrush	-	-	L	?	?	?	?
Plains prickly pear	-	-	-	L	L	L	-
Threetip sagebrush	L	L	L	M	M	L	-
Antelope bitterbrush	M	M	-	H	H	?	-

*Interpreted mostly from Instruction Memo ID-78-132

1 - Based on fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data.
- - Not used.

6. Seeding

This site is adapted to range seeding by conventional methods where slopes are suitable and gravels and rock outcrop do not inhibit seedbed preparation. The moist environment of this site makes other seeding methods suitable, but competition from sagebrush may need to be controlled.

7. Brush Management

Brush management can be effective on much of this site to reduce the sagebrush competition. Mechanical and chemical methods are normally restricted to flatter slopes and non-rocky soils. Prescribed burning can be used effectively on this site.

8. Topography

Domestic livestock can move freely over the site except where slopes become too steep and/or water is lacking. Wildlife can move freely over the entire site.

Site Name: Alluvial Bottom
8 to 13" ppt. (20-33 cm) - ARTRT/AGROP
- Basin big sagebrush/ Agropyron species (sod-forming)

A. Physical Characteristics

1. Physiographic Features

This site occurs in alluvial bottomlands. The soils are usually very deep and well drained. Slopes vary from 1 to 15 percent, and elevation ranges from 4,700 to 6,600 feet (1440-2000 m).

2. Climatic Features

a. Annual precipitation on this site ranges from 8 to 13 inches (20 to 33 cm). Approximately 40 to 50 percent comes in the winter plant dormant period (October-March), and 50 to 60 percent during the plant growing season. Additional moisture is recieved in the form of spring runoff from surrounding areas.

b. The plant growth period begins from April 1 to 15. Grasses and forbs are generally mature and curing by July 15 to 30. Grasses may undergo some regrowth in the late summer if rain is sufficient. Shrubs continue to grow during the dormant period, but at a much reduced rate. The optimum plant growth period is from May 1 to June 15. The average frost-free period is about 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is basin big sagebrush with an understory of sod-forming wheatgrasses (Agropyron spp.), bluebunch wheatgrass and great basin wildrye. The sagebrush can exceed five feet in height. Composition by air/dry weight is approximately 40 to 50 percent grass, 8 to 10 percent forbs and 30 to 40 percent shrubs.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	kg/ha Air Dry
Grasses		50-60	200-600	224-673
Wheatgrasses (sod-forming)	AGDA-AGSM	30-50	150-400	168-449

Bluebunch wheatgrass	AGSP	5-10	30-100	34-112
Basin wildrye	ELCI2	5-10	30-100	34-112
Nevada bluegrass	PONE3	1-2	10-20	11-22
Sandberg bluegrass	POSE	1-5	10-50	11-57
Bottlebrush squirreltail	SIHY	1-3	10-30	11-34
Indian ricegrass	ORHY	1-5	10-50	11-57
Letterman's needlegrass	STLE4	1-5	10-50	11-57
Forbs		8-10	50-100	57-112
Tapertip hawksbeard	CRAC3	1-3	10-30	11-34
Arrowleaf balsamroot	BASA3	1-3	10-30	11-34
Lupine	LUPIN	1-2	10-20	11-22
Locoweed milkvetch	ASTRA	1-2	10-20	11-22
Penstemon	PENST	T-1	T-10	T-11
Erioginum	ERIOG	1-2	T-20	T-22
Aster	ASTER	T-1	T-10	T-11
Rose pussytoes	ANRO2	1-3	10-30	11-34
Other perennial forbs	PPFF	1-2	10-20	11-22
Shrubs		30-40	150-400	168-449
Basin big sagebrush	ARTRT	20-30	100-300	112-336
Tall green rabbitbrush	CHVI8	1-3	10-30	11-34
Rubber rabbitbrush	CHNA2	1-3	10-30	1134
Spiney hopsage	GRSP	1-3	10-30	11-34

Total Annual Production:

Favorable Years	1000 lbs/ac air dry	(1121 kg/ha)
Median Years	600 lbs/ac air dry	(673 kg/ha)
Unfavorable Years	400 lbs/ac air dry	(449 kg/ha)

1/The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not necessarily reflect the extremes in production.

c. Total vegetation cover is approximately 35 to 40 percent.

d. Variation

On outer fringe areas of this site, there are transition zones between it and the adjacent sites. In these transition zones, the vegetation will be composed of species typical of both sites. The dominant sod wheatgrass has not yet been determined. Thickspike, steambank and western wheatgrass have all been tentatively identified on this site.

4. Soils

a. The soils of this site are mildly to moderately alkaline loams and gravelly loams. They are deep and well drained. Coarse fragments can exceed 35% by volume in the soil profile.

b. Typical soils are:

Little Lost-Birch Creek	Challis
Pachic Cryoboroll	Xeric torrifluvents
Sparmo (wet phase)	
Torrifluvent	

5. Location of Site

a. Typical example:

SW¼SW¼, Sec. 17, T. 9 N., R. 26 E., Butte County, Idaho
NW¼SW¼, Sec. 28, T. 10 N., R. 27 E., Butte County, Idaho

b. Counties site occurs in:

Butte
Custer

B. Interpretations (Potential Importance for the Major Uses)

1. Livestock Grazing

This site is best adapted for livestock grazing in the spring, early summer and fall. Normal water supplies can be short or absent, and livestock water may have to be hauled or otherwise made available.

If range condition declines through cattle grazing, basin big sagebrush increases while sod wheatgrass decreases. In

poor condition, the visual aspect is that of basin big sagebrush with very little grass understory.

Heavy use by sheep or cattle in the fall may tend to plant sagebrush seed, thus increasing the sagebrush density on the site.

3. Recreation Value and Natural Beauty

This site has little recreation value within the INEL as it is closed to the public. The Big Lost River and Little Lost River sinks are found within the site and are partially visible from the public highway.

4. Threatened or Endangered Plants and Animals

None known.

5. Relative Forage Quality

	*		1	2			
Common Name	Cattle	Domestic Sheep	Wild Horses	Mule Deer	Elk	Antelope	Bighorn Sheep
Grasses							
Wheatgrass (sod-forming)	H	M	M	?	?	?	-
Bluebunch wheatgrass	H	M	H	H	H	L	H
Basin wildrye	L	L	L	L	?	?	-
Nevada bluegrass	M	H	M	?	?	?	-
Sandberg bluegrass	L	H	M	H	M	M	L
Bottlebrush squirreltail	L	L	L	L	L	L	-
Indian ricegrass	H	H	L	M	L	?	M
Letterman's needlegrass	H	M	L	?	?	?	-
Forbs							
Tapertip hawksbeard	M	H	-	L	?	L	-
Arrowleaf balsamroot	L	H	-	M	M	L	-
Lupine	-	L	L	M	M	L	L
Locoweed milkvetch	-	-	L	L	?	L	-

Penstemon	L	L	-	L	L	L	-
Eriogonum	L	L	L	L	L	L	L
Aster	-	-	-	M	M	M	-
Rose pussytoes	-	-	-	L	L	L	-
Shrubs							
Basin big sagebrush	L	L	L	L	?	M	-
Tall green rabbitbrush	-	L	L	M	M	M	L
Rubber rabbitbrush	-	L	L	M	M	M	-
Spiny hopsage	L	L	-	L	?	M	M

*Interpreted mostly from Instruction Memo ID-78-132

1 - Based on fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data.
- - Not used.

6. Seeding

Range seedings on this site have a slight to moderate limitation due to low precipitation, but they can be established successfully.

7. Brush Management

Mechanical or chemical treatment and prescribed burning can be used on this site.

8. Topography

Domestic livestock and wildlife can move freely over the site.

Site Name: Loamy
16 to 22" ppt. (40 to 56 cm) - ARTRV/FEID
- Mountain big sagebrush/ Idaho fescue

A. Physical Characteristics

1. Physiographic Features

This site occurs on mountain slopes and in concave depressions. Slopes vary from 5 to 60 percent, and elevation ranges from 6,500 to 9,000 feet (1900 to 2750 m). It occurs mainly on north slopes and in deep snow pockets at lower and mid-elevations, but can occur on south slopes at higher elevations.

2. Climatic Features

a. Annual precipitation of this site ranges from 16 to 22 inches (40 to 56 cm). Approximately 50 to 60 percent comes in the winter plant dormant period (October-April) and 40 to 50 percent during the plant growing season (May-September). Snow depths range from 3 to 5 feet, with a snow pack water content of approximately 20 to 25 percent in April.

b. Plant growth begins about May 1 to 30. Grasses and forbs are usually mature by August 15 to 30. The optimum plant growth period is from May 15 to July 15. In years of above-normal precipitation, this site may stay green until fall dormancy. Shrubs grow throughout the growing season, slowing down in the late summer as soil moisture is depleted. The average frost-free period is approximately 50 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is mountain big sagebrush/Idaho fescue and bluebunch wheatgrass. Composition by weight is approximately 50 to 70 percent grass, 10 to 20 percent forbs and 15 to 30 percent shrubs.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	ag/ha Air Dry
Grasses		50-70	300-900	336-1009
Idaho fescue	FEID	40-50	250-700	280-785
Bluebunch wheatgrass	AGSP	10-15	50-150	57-168

Slender wheatgrass	AGCAM2	T-5	T-40	T-45
Columbia wheatgrass	STOCN	1-5	10-50	11-57
Big bluegrass	POAM	1-5	10-50	11-57
Mountain brome	BRCAC	1-5	10-50	11-57
Nodding brome	BRAN	1-5	10-50	11-57
Sandberg bluegrass	POSE	1-5	10-50	11-57
Nevada bluegrass	PONE	1-2	10-25	11-28
Prairie junegrass	KOCR	1-5	10-50	11-57
Other perennial grasses	PPGG	1-5	10-50	11-57
Carex spp.	CAREX	1-2	10-25	11-57
Forbs		10-20	75-175	84-195
Hoods phlox	PHHO	1-3	10-30	11-34
Longleaf phlox	PHLO	1-3	10-30	11-34
Sulphur erioginum	ERUM	1-3	10-30	11-34
Threeflower avens (Old man's whiskers)	GETR	T-1	T-10	T-11
Tailcup lupine	LUCA	1-2	10-25	11-28
Arrowleaf balsamroot	BASA3	1-5	10-50	11-57
Rose pussytoes	ANRO2	2-5	20-50	22-57
Tapertip hawksbeard	CRAC2	1-5	10-50	11-57
Erioginum spp.	ERIOG	1-3	10-30	11-34
Other perennial forbs	PPFF	2-3	20-30	22-34
Shrubs		15-30	150-450	168-502
Mountain big sagebrush	ARTRV	15-25	150-400	168-449
Mountain snowberry	SYOR2	1-5	10-50	11-57
Green rabbitbrush	CHVI8	1-3	10-30	11-34
Antelope bitterbrush	PUTR2	0-5	0-50	0-57
Prickly gilia	LEPU	T-2	T-20	T-22
Grey horsebrush	TECA	0-1	0-10	0-11

Total Annual Production:

Favorable Years	1500 lbs/ac air dry	(1682 kg/ha)
Median Years	800 lbs/ac air dry	(893 kg/ha)
Unfavorable Years	500 lbs/ac air dry	(560 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not necessarily reflect the extremes in production.

c. Total vegetation cover is approximately 35 to 50 percent.

d. Variations

At the higher elevations, this site grades into a sub-alpine, sagebrush, elksedge type. At the lower elevations, it grades into the mountain big sagebrush/bluebunch wheatgrass type. In these transition zones, species from both sites are present. This should be considered when determining ecological condition. The mountain sagebrush is susceptible to winter kill in dry, low snow years.

4. Soils

a. The soils of this site are deep, dark loams to gravelly loams. The 'A' horizon is usually 10 to 15 inches deep, but can be as thin as five inches. The subsoil varies from loam to clay loam. Gravels often exceed 35% by volume in the soil profile and can exceed 50 percent.

b. Typical soil series are:

Hoodle moist phase	Zeebar moist phase
Sleep moist phase	Vaysa moist phase
Hamtah	Vano moist phase
Meeger	Klug moist phase
Surrett moist phase	Zeale cool phase

5. Location of Site

a. County site occurs in:

Custer

B. Interpretations (Potential Importance of Major Uses)

1. Livestock Grazing

This site is best suited to livestock grazing during the summer. Natural water supplies are usually adequate. This site produces abundant forage when range condition is maintained in good to excellent condition.

If range condition declines due to livestock grazing, sagebrush, rabbitbrush and horsebrush increase while the grass understory decreases.

In poor condition, the site is dominated by mountain big sagebrush with a sparse understory of Kentucky bluegrass or remnants of the native species.

2. Wildlife

The high diversity of vegetation and productivity of this site make it a high use area for many wildlife species. Succulent grasses and forbs provide high protein feed for many wildlife species.

This site provides summer and fall habitat for mule deer, antelope and bighorn sheep in specific areas. Many bird species and small mammals use this site yearlong.

3. Recreation Value and Natural Beauty

The major recreation use of this site is deer and upland game hunting. This site and the surrounding ones provide opportunity to view wild horses on summer range.

There is a wide diversity of vegetation species, but not many showy forbs. This site is located at the higher scenic elevations.

4. Threatened or Endangered Plants and Animals

None Known.

5. Relative Forage Quality

	*		1	2			
Common Name	Cattle	Domestic Sheep	Wild Horses	Mule Deer	Elk	Antelope	Bighorn Sheep
Grasses							
Idaho fescue	H	H	H	M	M	L	M
Bluebunch wheatgrass	H	M	H	M	M	L	H
Slender wheatgrass	H	M	L	M	M	L	M
Columbia needlegrass	M	L	L	L	M	L	M
Big bluegrass	M	M	M	M	M	L	M
Nodding brome	H	M	M	L	M	L	M
Mountain brome	H	M	M	L	M	L	M
Sandberg bluegrass	L	H	L	M	M	M	L
Nevada bluegrass	M	H	M	M	M	L	M

Prairie junegrass	M	H	M	L	M	L	M
Carex spp.	M	M	L	M	H	M	M
Forbs							
Hoods phlox	-	-	M[3]	L	L	L	-
Longleaf phlox	-	-	L	L	L	L	-
Sulpher eriognum	-	L	L	L	L	L	-
Old man's whiskers	-	L	-	L	L	L	L
Tailcup lupine	-	L	L	M	H	L	-
Arrowleaf balsamroot	L	H	-	M	M	L	L
Rose pussytoes	-	-	-	L	L	L	-
Tapertip hawksbeard	M	H	-	L	L	L	L
Shrubs							
Mountain big sagebrush	-	L	L	H	M	M	M
Mountain snowberry	L	L	-	M	L	H	-
Green rabbitbrush	-	L	L	M	M	M	L
Antelope bitterbrush	M	M	-	H	H	L	L
Prickly gilia	-	L	-	L	L	-	L
Grey horsebrush	-	L	-	L	L	-	-

*Interpreted mostly from Instruction Memo id-78-132

1 - Based of fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data.
- - Not used.

6. Seeding

Where slope conditions allow, this site is well suited to range seeding. Competition from mountain big sagebrush can be severe unless it is adequately controled. Many species are adapted to this site and high production levels can be achieved with good management.

7. Topography

Domestic livestock and wildlife can move freely over this site. On the steeper slopes, livestock movement can be restricted depending upon availability of water.

Site Name: Gravelly Loam
8 to 11" ppt. (20 to 28 cm) - ARTRW/AGSP
- Wyoming big sagebrush/
Bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on steep mountain slopes, alluvial fans, terraces and drainage ways. It occurs on all aspects and elevation ranges from 4,700 to 6,200 feet (1440 to 1900 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 8 to 11 inches (20 to 28 cm). Approximately 40 to 50 percent comes in the winter plant dormant period (October-March) and 50 to 60 percent during the plant growing season (April-September). May and June usually receive 25 to 30 percent of the annual precipitation.

b. Plant growth begins about April 1 to 15 and grasses and forbs are usually matured by July 15 to 31. Grasses may green up again when fall rains are sufficient.

Shrubs continue to grow during the summer dormant period but at a much reduced rate. The optimum plant growth period is from May 1 to June 15. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is Wyoming big sagebrush and bluebunch wheatgrass. Composition by weight is approximately 50 to 60 percent grass, 20 to 30 percent shrubs and 5 to 10 percent forbs.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	Range in Production[1/] ag/ha Air Dry
Grasses		50-60	100-350	112-392
Bluebunch wheatgrass	AGSP	40-55	90-300	100-336
Sod wheatgrass	AGDA & AGSM	T-20	T-100	T-112

Prairie junegrass	KOCR	1-2	5-10	6-11
Indian ricegrass	ORHY	1-5	5-20	6-22
Sandberg bluegrass	POSE	1-5	5-20	6-22
Bottlebrush squirreltail	SIHY	1-3	5-15	6-17
Nevada bluegrass	PONE3	1-2	5-10	6-11
Sand dropseed	SPCR	0-2	0-10	0-11
Needle-and-Threadgrass	STCO4	1-3	5-15	6-17
Salmon wildrye*	ELAM2	0-10	0-50	0-57
Forbs		5-10	20-75	22-84
Eriogonum spp.	ERIOG	1-2	5-10	6-11
Hoods phlox**	PHHO	2-5	5-20	6-22
Musk phlox	PHMU	1-3	5-15	6-17
Indian paintbrush	CASTI	1-2	5-10	6-17
Globemallow	SPHAE	1-2	5-10	6-17
Wyeth eriogonum	ERHE2	1-2	5-10	6-17
Cushion eriogonum	EROV	T-1	T-5	T-6
Daisy	ERIGE	T-1	T-5	T-6
Astragalus	ASTRAG	1-2	5-10	6-11
Wall flower	ERYSI	T-1	T-5	T-6
Shrubs		20-30	75-200	84-224
Wyoming big sagebrush	ARTRW	15-25	50-150	57-168
Winterfat	EULA5	0-2	0-10	0-11
Plains prickly pear	OPPO	0-2	0-10	0-11
Green rabbitbrush	CHVI8	1-2	5-10	6-11

Total Annual Production:

Favorable Years	600 lbs/ac air dry	(673 kg/ha)
Median Years	300 lbs/ac air dry	(336 kg/ha)
Unfavorable Years	175 lbs/ac air dry	(195 kg/ha)

* Indigenous to the Challis area.
**In the Challis area, Hoods phlox may make up 10% of the plant community.

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 20 to 30 percent.

d. Variations

This site has broad transition areas with the gravelly loam 11 to 13 inch ppt. site (ATRW/AGSP). On the McCaleb soil, the more moist, less saline portion would be in the bottom end of this site. The drier, more saline portion of the McCaleb soil would be similar to the Nutalls saltbush/ Indian ricegrass site.

Where this site transitions to the fragile lands site (Shadscale/Salmon wildrye) the vegetation becomes very sparse and dominated by Wyoming big sagebrush. Caution should be used when rating ecological condition in these areas. Site potential is very low and ecological condition could be underrated.

The sod wheatgrass is usually present, but occurs in greater amounts in some areas than others.

4. Soils

The soils of the site are gravelly loams to very gravelly sandy loams. The soils are deep to moderately deep and well drained. Some steep slopes become extremely stony and/or gravelly. The parent material is alluvium and colluvium from sedimentary and metamorphic rocks. Gravels and coarse fragments can exceed 60 percent by volume in the soil profile. Typical soil series are:

Little Lost-Birch Creek	Challis
Braithwaite bouldery phase	Frailton
Pancheri silt loam	Challis moist phase
Siri gravelly loam	Levzig
Whiteknob	Venum
Sparmo	Pedoli
McCaleb	Gradco
	Bregar dry phase
	Rosebriar
	Flagton
	Nicholia dry phase
	Gelkie dry phase

5. Location of site:

a. Counties site occurs in:

Custer
Butte

B. Interpretations (Potential Importance for Major Uses)

1. Livestock Grazing

This site is best adapted for livestock grazing in the spring, fall and early winter. Natural water supplies are limited to a few springs and live streams. Better water distribution through piping or water hauling where appropriate may be needed to effectively use the site.

If range condition declines through cattle grazing, Wyoming big sagebrush will increase and bluebunch wheatgrass will decrease. In poor condition, the visual aspect is that of Wyoming big sagebrush with a barren understory.

Care should be taken not to confuse the low production potential of this site due to soil limitations with poor condition due to livestock grazing.

2. Wildlife

The Wyoming big sagebrush is important food and cover for the wildlife, Succulent grasses and forbs provide high protein spring and summer feed.

This site provides yearlong range for pronghorn antelope and is very important winter range. Pronghorn fawning occurs throughout the site.

Deer make slight use in mild winters and moderate to heavy use in severe winters on specific areas.

Sage grouse strutting grounds are scattered in specific areas. Large populations of sage grouse winter throughout this site where openings occur in the sagebrush. Nesting and rearing of young occurs in this site for sage grouse, doves, raptors and songbirds such as the meadowlark and horned lark. Raptors and carnivorous mammals hunt on this site.

3. Recreation Value and Natural Beauty

Antelope hunting is the major recreation use of this site with sage grouse hunting, deer hunting and siteseeing being significant, but of lesser importance. The site is mostly open space with smooth to rough terrain, gentle to steep slopes and sagebrush aspect.

4. Threatened or Endangered Plants and Animals

a. Cryptlantha interrupta

b. Hymenopappus filifolius var. idahoensis

c. Astragalus amnis-amissi

5. Relative Forage Quality

Common Name	* Cattle	Domestic Sheep	1 Wild Horses	2 Mule Deer	Elk	Antelope	Bighorn Sheep
Grasses							
Bluebunch wheatgrass	H	M	H	H	H	L	H
Sod wheatgrass	H	M	M	?	?	?	-
Prairie junegrass	M	H	M	L	M	?	-
Indian ricegrass	H	H	L	M	L	?	M
Sandberg bluegrass	L	H	M	H	M	M	L
Bottlebrush squirreltail	L	L	L	L	L	L	-
Nevada bluegrass	M	H	M	?	?	?	-
Sand dropseed	L	-	L	L	?	M	-
Needle-and-Threadgrass	H	L	L	L	M	L	L
Salmon wildrye	L	L	L	?	?	?	-
Forbs							
Eriogonum	L	L	L	L	L	L	L
Hoods phlox	-	-	M[3]	L	L	?	-
Musk phlox	-	-	-	L	L	?	-
Indian paintbrush	-	-	-	L	L	?	-
Globemallow	L	-	-	L	?	H	L
Wyeth eriogonum	L	L	L	L	L	L	L
Cushion eriogonum	L	L	L	L	L	L	L
Daisy	L	L	-	L	M	L	-
Astragalus	-	-	L	L	L	L	-
Wall flower	-	-	-	L	?	L	-
Shrubs							
Wyoming big sagebrush	-	-	L	H	M	H	L
Winterfat	H	H	L	M	L	L	-
Plains prickly pear	-	-	-	L	L	L	-

Green rabbitbrush	-	L	L	M	M	M	L

*Interpreted mostly from Instruction Memo ID-78-132

1 - Based on fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data.
- - Not used.

6. Seeding

This site is adapted to range seeding. However, steep slopes, transition zones to drier sites and the more stony portions of the site have severe limitation for seeding. Soil survey information and on-site investigation should be used to properly plan seedings. The low precipitation and gravelly nature of most of the soils in this site result in a slight to moderate hazard for seedling establishment.

7. Brush Management

Mechanical, chemical and prescribed burning are adapted to much of this site. The steeper and rockier portions of the site are best adapted for prescribed burning. Brush management projects should be carefully planned to consider the high wildlife values of this site.

8. Topography

Domestic livestock and wildlife can move freely over the flatter slopes. The steeper and stonier portions of the site may inhibit livestock movement due to distance from water, steep slopes and rock outcrops or bluffs.

9. Wild Horses

Wild horses make extensive use of this site in the antelope flat and lower road creek areas of the Challis Planning Unit. Unmanaged use by wild horses can result in a decline in range condition. The horses use this site at will each year during the critical time for plant growth. As range condition declines from overuse by horses, sagebrush increases and the grass understory decreases. In poor condition, the visual aspect is Wyoming big sagebrush with a barren ground understory.

Site Name: Gravelly Loam
11 to 13" ppt. (28 to 33 cm) - ARTRW/AGSP
- Wyoming big sagebrush/
Bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial fans, terraces, and steep mountain slopes. It occurs on all aspects and elevations ranging from 5,500 to 7,500 feet (1690 to 2300 m). Slopes range from 5 to 60 percent. At the higher elevations, it occurs mainly on southerly exposures.

2. Climatic Features

a. Annual precipitation of this site ranges from 11 to 13 inches (28 to 33 cm). Approximately 50 percent during the plant growing season (April-September). May and June receive approximately 25 to 30 percent of the annual precipitation. The climate is cool and arid.

b. Plant growth period begins between April 1 to 15. Grasses and forbs are usually matured by July 15 to 30. Grasses may green up if fall rains are sufficient. Shrubs continue to grow during the summer dormant period at a much reduced rate. The optimum plant growth period is from May 1 to June 15. The average frost-free period is between 50 to 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is Wyoming big sagebrush and bluebunch wheatgrass. The composition is approximately 50 to 70 percent grass, 5 to 10 forbs and 15 to 25 percent shrubs by weight.

b. Plant species, percent composition by weight and approximate product for each species in the potential plant community are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	ag/ha Air Dry
Grasses		50-70	200-500	224-560
Bluebunch wheatgrass	AGSP	50-60	175-450	195-502
Sandberg bluegrass	POSE	1-5	10-30	11-34

Indian ricegrass	ORHY	T-5	T-30	T-34
Nevada bluegrass	PONE3	0-2	0-15	0-17
Sod wheatgrass	AGSM & AGDA	0-10	0-75	0-84
Bottlebrush squirreltail	SIHY	1-3	5-25	6-28
Needle-and-Threadgrass	STCO4	0-3	0-25	0-28
Prairie junegrass	KOCR	T-2	5-15	T-17
Sand dropseed	SPCR	0-2	0-15	0-17
Letterman's needlegrass	STLE4	0-1	0-10	0-11
Salmon wildrye*	ELAM2	0-10	0-75	0-84
Thurber's needlegrass	STTH2	0-5	0-30	0-34
Forbs		5-10	15-80	17-90
Hoods phlox**	PHHO	2-5	5-30	6-34
Threadleaf phlox	PHMU	0-3	0-25	0-28
Indian paintbrush	CASTI	0-2	0-15	0-17
Globemallow	SPHAE	0-2	0-15	T-17
Eriogonum	ERIOG	T-2	T-15	T-17
Cushion eriogonum	EROV	T-1	T-10	T-11
Daisy	ERIGE	T-1	T-10	T-11
Astragalus	ASTRA	1-2	5-15	6-17
Wall flower	ERYSI	T-1	T-10	T-11
Arrowleaf balsamroot	BASA3	0-2	0-15	0-17
Tapertip hawksbeard	CRAC2	0-1	0-10	0-11
Shrubs		15-25	75-200	84-224
Wyoming big sagebrush	ARTRW	10-20	50-150	57-168
Green rabbitbrush	CHVI8	T-2	T-15	T-17
Rubber rabbitbrush	CHNA	T-1	T-10	T-11
Shrubby eriogonum	ERIOG	T-1	T-10	T-11
Plains prickly pear	OPPO	T-1	T-10	T-11
Dwarf goldenweed	HANA	1-2	5-15	6-17
Prickly gilia	LEPU	1-2	5-15	6-17
Pin cushion cactus	COMI (RNS4S)	T-1	T-10	T-11

Total Annual Production:

Favorable Years	800 lbs/ac air dry (893 kg/ac)
Median Years	450 lbs/ac air dry (502 kg/ha)
Unfavorable Years	300 lbs/ac air dry (336 kg/ha)

* Indigenous to the Challis area.
** In the Challis area, Hoods phlox may make up to 10% of the plant community.

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not necessarily reflect the extremes in production.

c. Total vegetation cover is approximately 25 to 30 percent.

4. Soils

a. The soils of this site are typically very deep and well drained. Permeability is moderate. Available water-holding capacity is medium. The surface is a loam to gravelly loam. Gravels and other coarse fragments often exceed 60% by volume below 12 to 15 inches in depth. The depth to gravels greater than 60 percent by volume can be less than 12 inches in depressions or where available moisture otherwise compensates for the high amount of gravels.

b. Typical soil series are:

Little Lost-Birch Creek	Challis
Bluedome loam	Reck variant
Combe gravelly loam	Reck low rainfall phase
Firebox stony phase	Katz
	Hollow
	Dawtonia high rainfall phase
	Steep low rainfall phase
	Zand
	Sence
	Eames
	Jonda
	Brabas
	Pecture
	Stupile low rainfall phase

5. Location of Site

a. Typical example:

SE¼SE¼, Section 22, T. 11 N., R. 26 E., Custer County, Idaho
SW¼NW¼, Section 25, T. 8 N., R. 28 E., Butte County, Idaho

b. Counties occurring in:

Custer
Butte
Lemhi

B. Interpretations

1. Livestock Grazing (Potential Importance for Major Uses)

This site is best adapted for livestock use in the spring, early summer and fall. Natural water supplies can be short or absent in areas, and water may have to be piped, hauled or otherwise made available.

a. If range condition declines, Wyoming big sagebrush increases while bluebunch wheatgrass decreases. In poor condition, the visual aspect is that of Wyoming big sagebrush with a very sparse grass understory.

2. Wildlife

The wildlife depend heavily on Wyoming big sagebrush for food and cover requirements throughout the year. Succulent grasses and forbs are high protein food sources in the spring and summer for wildlife.

This site provides yearlong range for pronghorn antelope and is very important for summer range and fawning. Slight deer use occurs during the summer. Critical mule deer winter range occurs on this site in the Challis area.

Sage grouse strutting grounds occur in this site (openings in sagebrush cover), and nesting and brood-rearing occurs in the spring and summer.

Wintering sage grouse, antelope and small mammals occur throughout this site. Songbirds, such as horned lark and meadowlark, nest on this site.

In the Challis area, mule deer make high to moderate use of the site in specific locations during the winter.

3. Recreation Value and Natural Beauty

Recreation values on this site include antelope, upland game bird hunting, with some camping being done in the Pass Creek area in the Little Lost drainage. The site is mostly open space with sagebrush aspect providing many prime areas from which to view the beauties of the surrounding mountains.

4. Threatened or Endangered Plants and Animals

a. Cryptlantha interrupta

5. Relative Forage Quality

	*		1	2			
Common Name	Cattle	Domestic Sheep	Wild Horses	Mule Deer	Elk	Antelope	Bighorn Sheep
Grasses							
Bluebunch wheatgrass	H	M	H	H	H	L	H
Sandberg bluegrass	L	H	M	H	M	M	L
Indian ricegrass	H	H	L	M	L	?	M
Nevada bluegrass	M	H	M	?	?	?	-
Sod wheatgrass	H	M	M	?	?	?	-
Bottlebrush squirreltail	L	L	L	L	L	L	-
Needle-and-Thread	H	L	L	L	M	L	L
Prairie junegrass	M	H	M	L	M	?	-
Sand dropseed	L	-	L	L	?	M	-
Salmon wildrye	L	L	L	?	?	?	-
Thurber's needlegrass	-	-	L	?	?	?	-
Forbs							
Hoods phlox	-	-	M[3]	L	L	?	-
Threadleaf phlox	-	-	-	L	L	?	-
Indian paintbrush	-	-	-	L	L	?	-
Globemallow	L	-	-	L	?	H	L
Eriogonum	L	L	L	L	L	L	L
Cushion eriogonum	L	L	L	L	L	L	L
Daisy	L	L	-	L	M	L	-
Astragalus	-	-	L	L	L	L	-
Wall flower	-	-	-	L	?	L	-
Arrowleaf balsamroot	L	H	-	M	M	L	-
Tapertip hawksbeard	M	H	-	L	?	L	-
Shrubs							
Wyoming big sagebrush	-	-	L	H	M	H	L

Green rabbitbrush	-	L	L	M	M	M	L
Rubber rabbitbrush	-	L	L	M	M	M	-
Shrubby eriogonum	L	L	-	L	L	M	L
Plains prickly pear	-	-	-	L	L	L	-
Dwarf goldenweed		-	-	L	?	L	-
Prickly gilia	-	L	-	L	L	?	L
Pin cushion cactus	-	-	-	L	L	L	-

*Interpreted mostly from Instruction Memo ID-78-132

1 - Based of fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data.
- - Not used.

6. Seeding

This site is adapted to range seeding with a slight hazard of seeding failure due to low precipitation and gravelly soils. The steeper and stonier portions of this site have a severe limitation for seeding.

7. Brush Management

Mechanical, chemical and prescribed burning treatments adapted to much of this site. The steeper and rockier portions of the sites are best adapted for prescribed burning. Brush management projects should be carefully planned to consider the high wildlife values of this site.

8. Topography

Domestic livestock and wildlife can move freely over much of this site. Some slopes exceed 50% which could limit livestock use on these specific areas depending on water availability.

9. Wild Horses

This site is an important source of forage for wild horses throughout their range.

Site Name: Windswept Ridge
11 to 16" ppt. (28 to 40 cm) - ARFR4/ARAR8/PHHO/POA
- Fringed sage/Low sage brush/Hoods phlox/poa spp.

A. Physical Characteristics

1. Physiographic Features

This site occurs mainly on ridgetops at elevations from 6,500 to 8,500 feet (1990 to 2600 m). It usually occupies the windswept portion of the ridgetop or mountain slope.

2. Climatic Features

a. The limiting climatic factor of this site is the wind blowing the precipitation over the site and very high evapotranspiration. Very little snow accumulates on this site.

b. Plant growth begins approximately April 1 to May 1. Grasses and forbs are usually mature by July 1 to 15.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is barren, open ground with low-growing vegetation. The plant community is varied and the approximate composition by weight is 20 to 40 percent grass, 30 to 40 percent forbs and 30 to 40 percent shrubs.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	Range in Production[1/] kg/ha Air Dry
Grasses		30-40	50-200	57-224
Letterman bluegrass (rare)	POLE3	5-10	15-50	17-57
Poa spp.	POA	10-15	25-75	28-84
Sandberg bluegrass	POSE	5-10	15-50	17-57
Bluebunch wheatgrass	AGSP	1-10	5-50	6-57
Idaho fescue	FEID	1-10	5-50	6-57
Bottlebrush squirreltail	SIHY	1-2	5-10	6-11
Prairie junegrass	KOCR	T-1	T-5	T-6
Carex spp.	CAREX	1-2	5-10	6-11

Forbs		30-40	50-200	57-224
Hoods phlox	PHHO	20-30	25-125	28-140
Pursh loco milkvetch	ASPU9	1-2	5-10	6-11
Crag aster	ASSC3	1-5	5-25	6-28
Kings sandwort	ARKI	1-2	5-10	6-11
Rose pussytoes	ANRO2	1-2	5-10	6-11
Erioginum	ERIOG	1-2	5-10	6-11
Penstemon	PENST	1-2	5-10	6-11
Indian paintbrush	CASTIL	1-2	5-10	6-11
Other perennial forbs	PPFF	1-2	5-10	6-11
Shrubs		**20-30**	**25-125**	**28-140**
Low sagebrush	ARAR8	T-5	T-25	T-28
Mountain big sagebrush (stunted)	ARTRV	5-10	15-50	17-57
Three-tip sagebrush (stunted)	ARTR4	5-10	15-50	17-57
Wyoming big sagebrush (stunted)	ARTRW	5-10	15-50	17-57
Fringed sagebrush	ARFR4	5-10	15-50	17-57
Chicken sage	TANU	0-1	0-5	0-6
Green rabbitbrush (stunted)	CHVI8	1-3	5-15	6-17
Grey horsebrush	TECA	T-1	T-5	T-6
Winterfat	EULA5	T-2	T-10	T-11
Stemless goldenweed	HAAC	1-2	5-10	611

Total Annual Production (Air Dry)

Favorable Year	450 lbs/ac (502 kg/ha)
Median Year	300 lbs/ac (336 kg/ha)
Unfavorable Year	100 lbs/ac (112 kg/ha)

1/ The range shown approximates the variation with the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 5 to 10 percent.

d. Variations

The relative species composition of this site varies widely. Shrub species from adjacent sites often occur on this site, but in a very stunted form. When determining ecological condition, these variations should be allowed for.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. There can be a heavy textured B horizon present less than 20 inches deep. Gravels can exceed 60 percent by volume at depths less than 20 inches. The most significant factor affecting this site is not soil, but the high wind stress and resultant harsh environment.

b. Typical Soil Series are:

Keda
Reck warm phase

5. Location of Site

a. Typical example

b. Counties occurring in:

Idaho: Butte
Custer

B. Interpretations (Potential Importance for Major Uses)

1. Livestock Grazing

This site is not a high value area for livestock grazing due to the low production potential. Stocking rates are low and quality forage is available only for a short time in the spring. Overgrazing by livestock reduces what little vegetation cover is available for this site.

2. Wildlife

In the Challis Planning Unit, deer, elk and bighorn sheep may frequent this site, especially during migration. Sage grouse frequently winter on this site because of its snow-free characteristic. It provides little food or cover.

3. Wild Horses

This site is important to the wild horses in that is free of snow in the winter.

4. Recreation Value and Natural Beauty

This site often provides a vantage point from which to view surrounding scenery.

5. Threatened or Endangered Plants and Animals

None known.

6. Relative Forage Quality

Common Name	* Cattle	* Domestic Sheep	1 Wild Horses	2 Mule Deer	2 Elk	2 Antelope	2 Bighorn Sheep
Grasses							
Letterman bluegrass	L	L	M	-	M	-	-
POA	M	L	M	-	M	-	-
Sandberg bluegrass	L	H	M	H	M	M	L
Bluebunch wheatgrass	H	M	H	H	H	L	H
Idaho fescue	H	H	H	M	M	?	M
Bottlebrush squirreltail	L	L	L	L	L	L	-
Prairie junegrass	M	H	M	L	M	?	-
Carex spp.	M	M	L	M	H	M	-
Forbs							
Hoods phlox	-	-	M[3]	L	L	?	-
Pursh loco milkvetch	-	-	L	L	L	L	-
Crag aster	-	-	-	M	M	M	-
Kings sandwort	-	-	-	?	?	?	?
Rose pussytoes	-	-	-	L	L	L	-
Eriogonum	L	L	L	L	L	L	L
Penstemon	L	L	-	L	L	L	-
Indian paintbrush	-	-	-	L	L	?	-
Shrubs							
Low Sagebrush	-	-	L	M	?	H	-
Mountain big sagebrush	-	L	L	H	M	M	M
Three-tip sagebrush	L	L	L	M	M	L	-
Wyoming big sagebrush	-	-	L	H	M	H	L
Fringed sagebrush	-	-	L	M	?	L	-

Chicken sage	-	-	-	L	?	H	-
Green rabbitbrush	-	L	L	M	M	M	L
Grey horsebrush	-	L	-	L	L	?	-
Winterfat	H	H	L	M	L	L	-
Stemless goldenweed	-	-	-	L	?	L	-

*Interpreted mostly from Instruction Memo ID-78-132

1 - Based on fecal studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No data
- - Not used

7. Seeding

There are severe limitations for range seeding on this site by conventional methods due to extremely gravelly soils. Also the brush environment of this site will normally not allow seedling establishment.

8. Brush Management

This practice is not needed or useful on this site.

9. Topography

Topography is not restrictive to livestock or wildlife movement on this site.

Site Name: Flagstone
8 to 11" ppt. (20 to 28 cm) - ARTRW/ELAM2
- Wyoming Big Sagebrush/
Salmon Wildrye

A. Physical Characteristics

1. Physiographic Features

This site occurs on steep slopes and rolling hills. Slopes range from 5 to 60 percent. It can occur on any aspect and elevation ranges from 5,000 to 7,000 feet (1530 to 2140 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 8 to 11 inches (20 to 28 cm). Approximately 40 to 50 percent comes in the winter dormant period (October-March) and 50 to 60 percent during the plant growing season (April-September). May and June usually receive 25 to 30 percent of the annual precipitation.

b. Plant growth begins about April 1 to 15, and grasses and forbs are usually matured by July 15 to 31. Grasses may green up again when fall rains are sufficient.

Shrubs continue to grow during the summer dormant period, but at a much reduced rate. The optimum plant growth period is from May 1 to June 15. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is Wyoming big sagebrush and Salmon wildrye. Plant composition by weight is approximately 40 to 50 percent grass, 5 to 10 percent forbs and 30 to 40 percent shrubs.

b. Plant species, percent composition by weight and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	kg/ha Air Dry
Grasses		40-50	75-250	84-280
Salmon wildrye	ELAM2	35-45	70-200	78-224
Sandberg bluegrass	POSE	1-5	5-20	6-22

Bottlebrush squirreltail	SIHY	1-2	5-10	6-11
Indian ricegrass	ORHY	1-2	5-10	6-11
Bluebunch Wheatgrass	AGSP	1-5	5-20	6-22
Forbs		5-15	20-75	22-84
Hoods phlox	PHHO	5-10	15-50	17-57
Cushion erioginum	EROV	1-2	5-10	6-11
Sulphur erioginum	ERUM	T-1	T-5	T-6
Rydberg penstemon	PERI	1-2	5-10	6-11
Pursh loco milkvetch	ASPU9	1-2	5-10	6-11
Other perennial forbs	PPFF	1-2	5-10	6-11
Shrubs		30-40	75-200	84-224
Wyoming big sagebrush	ARTRW	25-35	50-150	57-168
Plains prickly pear	OPPO	1-2	5-10	6-11
Tall green rabbitbrush	CHVI8	1-2	5-10	6-11
Bud sagebrush	ARSP5	T-1	T-5	T-6
Winterfat	EULA5	T-1	T-5	T-6
Spiny hopsage	GRSP	T-1	T-5	T-6
Chicken sage	TANU	T-1	T-5	T-6
Stemless goldenweed	HAAC	T-2	T-10	T-11

Total Average Annual Production:

Favorable Years	500 lbs/ac air dry (560 kg/ha)
Median Years	300 lbs/ac air dry (336 kg/ha)
Unfavorable Years	175 lbs/ac air dry (195 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 20 to 30 percent.

d. Variations:

There are broad transition zones between this site and the fragile lands site (shadscale/Salmon wildrye) and the

gravelly loam 8 to 10 inches ppt. site (Wyoming big sagebrush/ Bluebunch wheatgrass). This site takes on characteristics of these adjacent sites in the transition areas. This should be considered when determining ecological condition.

4. Soils

a. The soils of this site are gravelly to extremely gravelly loams. They are deep to moderately deep and well drained. Flagstones and/or gravels often exceed 50 percent by volume in the soil profile.

b. Typical soil series are:

Flagton dry phase
Rosebriar dry phase
Gradco dry phase
Dawtonia
Levzig dry phase

5. Location of Site:

Custer County

B. Interpretations (Potential Importance for Major Uses)

1. Livestock Grazing

This site is best suited for livestock grazing during the late spring and fall. There is not an abundance of natural water in the areas where this site occurs.

In poor condition, this site is dominated by sagebrush and Hoods phlox with very sparse grasses and other forbs.

2. Wildlife

Chukars, rattlesnakes, various songbirds and small mammals are common to this site. Although fairly arid, the area is important for antelope and sage grouse.

3. Wild Horses

This site occurs in several areas throughout the horse range. It occurs in the area around Birdie Peak, between Lone Pine Peak and Grandview Canyon, where about 10 wild horses spend approximately 60 percent of their time.

4. Threatened or Endangered Plants and Animals

Salmon Wildrye (Elymus ambiguus salmonis), the major

grass in this site, is an endemic plant in this area; however, it is quite common in the area, occurring on two other sites.

5. Relative Forage Quality

Common Name	* Cattle	* Domestic Sheep	1 Wild Horses	2 Mule Deer	2 Elk	2 Antelope	2 Bighorn Sheep
Grasses							
Salmon wildrye	L	L	L	?	?	?	-
Sandberg bluegrass	L	H	M	H	M	M	L
Bottlebrush squirreltail	L	L	L	L	L	L	-
Indian ricegrass	H	H	L	M	L	?	M
Bluebunch wheatgrass	H	M	H	H	H	L	H
Forbs							
Hoods phlox	-	-	M[3]	L	L	?	-
Cushion eriogonum	-	L	L	L	L	L	L
Sulphur eriogonum	-	L	L	L	L	L	L
Rydberg penstemon	L	L	-	?	?	?	-
Pursh loco milkvetch	-	-	L	?	?	?	?
Shrubs							
Wyoming big sagebrush	-	-	L	H	M	H	L
Plains prickly pear	-	-	-	L	L	L	-
Green rabbitbrush	-	L	L	M	M	M	L
Bud sagebrush	L	M	L	L	?	L	-
Winterfat	H	H	L	M	L	L	-
Spiny hopsage	L	L	-	L	?	M	M
Chicken sage	-	-	-	L	?	H	-
Stemless goldenweed	-	-	-	L	?	L	-

*Interpreted from Instruction Memo ID-78-132

1 - Based on feed studies.
2 - Based on generalized relative consumption rates from studies and research.
3 - Mostly winter and spring.
H - High
M - Moderate
L - Low
? - No Data
- - Not Used

6. Seeding

This site is not well suited to seedings due to steep slopes and stony, gravelly soils.

7. Brush Management

Most of this site lends itself well to brush management. Prescribed burning should be used on the steeper portions of the site.

8. Topography

Livestock, wild horses and wildlife can move freely over this site. The steeper slopes and lack of water in some areas prevent livestock from using some portions of the site.

Site Name: Clayey 13-16" ppt. (33-40 cm) - ARAR8/FEID
low sagebrush/
Idaho fescue

A. Physical Characteristics

1. Physiographic Features

This site occurs on foothills, low rolling hills, ridges, and mountain slopes. Slope varies from 5-30%, and elevation ranges from 6500 to 8500 feet (1900-2600 m).

2. Climatic Features

a. The annual precipitation of this site ranges from 13-16 inches. Approximately 50% comes in the plant dormant period (October-March) and 50% in the plant growing season (April-September).

b. Plant growth begins about April 15-May 1, and grasses and forbs are usually mature by July 15-August 1. Shrubs continue to grow throughout the summer period but at a reduced rate. Grasses may green up again when fall rains are sufficient.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is low sagebrush, Idaho fescue, and bluebunch wheatgrass. Composition by weight is approximately 50-70% grass, 15-70% forbs, and 20-30% shrubs.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air dry	kg/ha Air dry
Grasses		50-70	150-450	168-502
Idaho fescue	FEID	30-40	80-250	90-280
bluebunch wheatgrass	AGSP	20-30	50-200	57-224
Sandberg bluegrass	POSE	10-20	30-100	34-112
prairie junegrass	KOCR	1-5	5-30	6-34
bottlebrush squirreltail	SIHY	1-2	5-15	6-17
Carex spp.	CAREX	1-2	5-15	6-17
Forbs		15-25	50-150	57-168
rose pussytoes	ARNO	1-5	5-30	6-34
Hookers balsamroot	BAHO	5-10	20-50	22-57
Indian paintbrush	CASTI	1-2	5-15	6-17
Hoods phlox	PHHO	5-10	20-50	22-57
lomatium	LOMAT	1-2	5-15	6-17
locoweed milkvetch	ASTRAG	1-2	5-15	6-17
lupine	LUPIN	1-2	5-15	6-17
eriogonum	ERIOG	1-5	5-30	6-34
other perennial forbs	PPFF	1-3	5-20	6-22
Shrubs		20-30	75-200	84-224
low sagebrush	ARAR8	15-25	75-175	84-195
fringed sage	ARFR4	1-2	5-15	6-17
other shrubs	SSSSS	1-3	5-30	6-34

Total Annual Production: (Air Dry)

Favorable Years	700 lbs/ac (785 kg/ha)
Median Years	400 lbs/ac (449 kg/ha)
Unfavorable Years	250 lbs/ac (280 kg/ha)

1/ The range shown approcimates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 30-40%.

d. Variations

There may be a low sagebrush/Sandberg bluegrass ecological site intermixed with this site. Further soils and vegetation study are needed to determine this. The Sandberg bluegrass site would be lower producing (estimated 200-400 lbs/ac range) and would have less vegetative cover.

4. Soils

a. The soils of this site are gravelly loams and clay loams. The depth to the clay horizon is 3 to 10 inches. Gravels often exceed 40% by volume in the B horizon.

b. Typical Soil Series Are:

Reck Moist Phase

5. Location of Site

a. Counties occuring in:

Idaho: Custer

B. Interpretations (Potential Importance of Major Uses)

1. Livestock Grazing

This site is best adapted to livestock grazing during late spring, summer, and fall. There is not an abundance of natural water in the areas where this site occurs.

In poor condition, this site is dominated by sagebrush, Hoods phlox with sparse grasses.

2. Wildlife

This site is common to all big game ranges. With the comparatively good vegetational cover and diversity, numerous small game and non-game species are present.

3. Wild Horses

This site, where it occurs in the wild horse range, supplies a considerable amount of quality forage in good and excellent condition. Where it occurs on ridges in the horse range it is an important winter food source.

4. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Idaho fescue	H	H	H	M	?	M	M
R	bluebunch wheatgrass	H	M	H	H	L	H	H
A	Sandberg bluegrass	L	H	M	H	M	M	L
S	prairie junegrass	M	H	M	L	?	M	-
S	bottlebrush squirreltail	L	L	L	L	L	L	-
E	Carex spp.	M	M	L	M	M	H	-
S								
	rose pussytoes	-	-	-	L	L	L	-
F	Hookers balsamroot	-	-	-	?	?	?	-
O	Indian paintbrush	-	-	-	L	?	L	-
R	Hood phlox	-	-	M3	L	?	L	-
B	lomatium	-	-	-	M	M	?	M
S	locoweed milkvetch	-	-	L	L	L	?	-
	lupine	L	L	L	M	L	M	L
	eriogonum	-	-	L	L	L	L	L
S	low sagebrush	-	-	L	M	H	?	-
H	fringed sage	-	-	L	M	L	?	-
R								
U								
B								
S								

H=High
M=Moderate
L=Low
?=No data
-=Not used
* Interpreted mostly from Instruction Memo Id-78-132.
1/ Based on fecal studies.
2/ Based on generalized relative consumption rates from studies and research.
3/ Mostly winter and spring.

5. Seeding

This site is not generally adapted to seeding by conventional methods.

6. Brush Management

This practice is not normally useful or desired on this site.

7. Topography

Livestock, wild horses, and wildlife can move freely over this site.

Site Name: Limey Gravelly 8-13" ppt. (20-33 cm) - ARARN/AGSP black sagebrush/ bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial fans, terraces, and mountain slopes. Slopes range from 5-60%. It occurs on all aspects and elevation ranges from 4800 to 6200 feet (1435-1900 m) in the Little Lost-Birch Creek area, and 6500 to 8000 feet (1990-2450 m) in the Challis area.

2. Climatic Features

a. Annual precipitation ranges from 8-13 inches (20-33 cm); 8-11 inches (20-28 cm) is the average in Little Lost-Birch Creek area. Approximately 40-50% comes in the plant dormant period (October-March) and 50-60% during the plant growing season (April-September). May and June usually receive approximately 25-30% of the annual precipitation.

b. Plant growth begins about April 1-15, and grasses and forbs usually mature by July 15. The optimum plant growth period is normally from May 1 to June 15. Shrubs continue to grow during the summer dormant period but at a much reduced rate. Grasses may green up again when fall rains are sufficient. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect is black sagebrush and bluebunch wheatgrass. Composition by weight is approximately 45-60% grass, 1-5% forbs, and 30-45% shrubs.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac air dry	kg/ha air dry
Grasses		45-60	150-300	168-336
bluebunch wheatgrass	AGSP	40-55	135-270	151-303
*Salmon wildrye	ELAM2	10-20	40-100	45-112
Sandberg bluegrass	POSE	2-3	10-30	11-34
needle-and-threadgrass	STCO4	0-1	0-5	0-6
prairie junegrass	KOCR	0-1	0-5	0-6
Indian ricegrass	ORHY	0-1	0-5	0-6
Nevada bluegrass	PONE3	0-1	0-5	0-6
bottlebrush squirreltail	SIHY	0-1	0-5	0-6
Forbs		1-5	15-30	17-34
Hoods phlox	PHHO	1-2	5-10	6-11
wyeth eriogonum	ERHE2	T-1	3-5	3-6
needleleaf phlox	PHMU	1-2	5-10	6-11
scarlet globemallow	DPCO	0-1	0-5	0-6
Shrubs		30-45	120-240	135-269
black sagebrush	ARARN	30-40	100-210	112-235
shadscale saltbush	ATCO	T-3	5-15	6-17
shrubby eriogonum	ERIOG	T-2	5-10	6-11
green rabbitbrush	CHVI5	T-1	1-5	1-6
winterfat	EULA5	0-1	0-5	0-6
plains prickly pear	OPPO	0-1	0-5	0-6
stemless goldenweed	HAPLO	1-2	5-10	6-11

Total Annual Production: (Air Dry)

Favorable Years	700 lbs/ac air dry - (785 kg/ha)
Median Years	400 lbs/ac air dry - (449 kg/ha)
Unfavorable Years	300 lbs/ac air dry - (336 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

* Indigenous to the Challis area.

c. Vegetation cover is approximately 15-20%.

d. Variations

Where this site occurs on shallow ridgetops or shallow steep slopes, black sagebrush is more dominant in the plant community, and total production potential is less than typical for the site (200-400 lbs/ac - 224-450 kg/ha). There are broad transition zones between this site and the ARAR8/AGSP (low sagebrush/bluebunch wheatgrass) site in the Little Lost-Birch Creek area. At higher elevations in the Challis area, in very minor areas, the production of this site ranges from 800-1700 lbs/ac (897-1906 kg/ha) with species composition remaining about the same. Idaho fescue is the dominant grass on minor north slopes or snow pockets in the Challis area.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. They can be stony, bouldery, and mildly alkaline or carbonic. An indurated hardpan can occur at varying depths from 9 to 40 inches. Gravels often exceed 60% by volume below 12 inches in depth.

The parent material is alluvium and colluvium from metamorphic and sedimentary rocks, heavily influenced by limestone. These soils are cold (47°F mean annual soil temperature).

b. Typical soil series are::

Little Lost-Birch Creek	Challis
Siri (dry phase)	Nitchley
Allhands gravelly loam	Instalay
Lien gravelly loam	
Surrett (stony phase)	
Braithwaite extremely bouldery (sandy phase)	
McCaleb (dry phase)	
Firebox (dry phase)	

5. Location of Site:

a. Typical example:

SE¼SW¼, Section 6, T. 8 N., R. 27 E., Butte county, Idaho
NE¼SE¼, Section 9, T. 7 N., R. 30 E., Butte County, Idaho
NE¼SW¼, Section 7, T. 11 N., R. 20 E., Custer County, Idaho

b. Counties site occurs in:

Custer
Butte

B. Interpretations (Potential Importance of Major Uses)

1. Livestock Grazing

This site is best adapted for livestock grazing in the spring, early summer, and fall. Natural water supplies are short or absent, and livestock water may have to be piped, hauled, or otherwise made available.

If range condition declines through cattle grazing, black sagebrush increases while bluebunch wheatgrass decreases. In poor condition, the visual aspect is that of black sagebrush with a sparse grass understory. Vegetative cover in poor condition is estimeated to be 5-10%.

Care must be taken not to confuse the shallow soil areas described in the variations of this site as poor condition. They are natural and not caused by livestock grazing.

Heavy use by sheep or wildlife in the fall and winter can reduce the vigor and abundance of black sagebrush.

2. Wildlife

This site provides yearlong range for pronghorn antelope and is very important for their winter range. Deer make slight use in mild winters and moderate-to-heavy use in severe winters. Only in extremely severe winters do elk use this site on the lower alluvial fans. Sagegrouse booming grounds are scattered in specific areas. Raptors hunt this site and it provides nesting for birds such as the horned lark.

3. Watershed Values

The soils on this site are in hydrologic group B. When hydrologic conditions of the vegetative cover is good, natural erosion hazard is slight. Bare soil erosion hazard is moderate.

4. Recreation Value and Natural Beauty

Antelope hunting is the major recreation use of this site. The site is open space with smooth terrain, varied slopes, and low-growing vegetation.

5. Threatened or Endangered Plants and Animals

None known.

6. Archaeological Values

None known.

7. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	bluebunch wheatgrass	H	M	H	H	H	L	H
R	Salmon wildrye	L	L	L	?	?	?	-
A	Sandberg bluegrass	L	H	M	H	M	M	L
S	needle-and-threadgrass	H	L	L	L	M	L	L
S	prairie junegrass	M	H	M	L	M	?	-
E	Indian ricegrass	H	H	L	M	L	?	M
S	Nevada bluegrass	M	H	M	?	?	?	-
	bottlebrush squirreltail	L	L	L	L	L	L	-
F	Hoods phlox	-	-	M3	L	L	?	-
O	wyeth eriogonum	-	L	L	L	L	L	L
R	needleleaf phlox	-	-	-	L	L	?	-
B	scarlet globemallow	L	-	-	L	?	H	L
S								
S	black sagebrush	L	L	L	L	?	M	-
H	shadscale saltbush	L	M	L	M	?	L	-
R	shrubby eriogonum	L	L	-	L	L	M	L
U	green rabbitbrush	-	L	L	M	M	M	L
B	winterfat	H	H	L	M	L	L	-
S	plains prickly pear	-	-	-	L	L	L	-
	stemless goldenweed	-	-	-	L	?	L	-

* Interpreted mostly from Instruction Memo ID-78-132.
1/ Based on fecal studies.
2/ Based on generalized relative consumptive rates from studies and research.
3/ Mostly winter and spring.
H= High
M= Moderate
L= Low
?= No data
-= Not used

8. Seeding

There are moderate-to-severe limitations for range seeding on this site by conventional methods due to gravelly or stony soils and, in some cases, steep slopes. The dry climate makes seeding establishment hazardous.

9. Brush Management

This practice is not normally desired or useful on this site.

10. Topography

Domestic livestock can move freely over this site. Some slopes exceed 50% which may limit livestock use dependent upon water availability and use patterns.

11. Wild Horses

Where this site occurs in the wild horse range it is an important source of forage for the horses.

Site Name: Gravelly 13-16" ppt. (33-40 cm) - ARTR4/FEID
Threetip/sagebrush/
Idaho fescue

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial foothills, mountain slopes, and hillsides. Slopes are usually less than 30%, but do reach 60% on north aspects. It occurs on all aspects and elevation ranges from 6000 to 9000 feet (1840-2750 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 13-16 inches (33-40 cm). Approximately 40-50% comes in the winter plant dormant period (October to March) and 50-60% during the plant growing season (April-September). May and June usually receive 25-30% of the annual precipitation.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is threetip sagebrush and Idaho fescue. The composition is approximately 55-65% grass, 1-5% forbs, and 20-30% shrubs by weight.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac Air Dry	Range in Production 1/ kg/ha Air Dry
Grasses		55-65	200-500	224-560
Idaho fescue	FEID	40-50	150-400	168-449
bluebunch wheatgrass	AGSP	5-10	30-100	34-112
Nevada bluegrass	PONE3	1-3	10-30	11-34
Sandberg bluegrass	POSE	2-5	10-40	11-45
bottlebrush squirreltail	SIHY	T-1	T-10	T-11
prairie junegrass	KOCR	1-3	10-30	11-34
needle-and-threadgrass	STCO4	T-1	T-10	T-11
Forbs		5-15	50-125	57-140
Hoods phlox	PHHO	1-5	10-50	11-57
astragalus	ASTRA	1-2	10-20	11-22
death camas	ZYPA	T-1	T-10	T-11
musk phlox	PHMU	T-2	T-20	T-22
cushion eriogonum	EROV	T-1	T-10	T-11
eriogonum spp.	ERIOG	T-1	T-10	T-11
Indian paintbrush	CASTI	1-2	10-20	11-22
tailcup lupine	LUCA	T-1	T-10	T-11
sego lily	CANU	T-1	T-10	T-11
rose pussytoes	ANRO	1-3	10-30	11-34
tapertip hawksbeard	CRAC2	T-3	T-30	T-34
other perennial forbs	PPFF	1-3	10-30	11-34
Shrubs		20-30	100-250	112-280
threetip sagebrush	ARTR4	15-25	75-200	84-224
grey horsebrush	TECA	1-2	10-20	11-22
shrubby eriogonum	ERIOG	1-2	10-20	11-22
tall green rabbitbrush	CHVI8	1-2	10-20	11-22
rubber rabbitbrush	CHNA	T-1	T-10	T-11
broadleaf rabbitbrush	CHVIP	T-1	T-10	T-11
prickly gilia	LEPU	T-1	T-10	T-11

Total Potential Annual Production:

Favorable Years	900 lbs/ac air dry (1009 kg/ha)
Median Years	500 lbs/ac air dry (560 kg/ha)
Unfavorable Years	300 lbs/ac air dry (336 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 20-30%.

d. Variations

In the transition area between this site and the threetip sagebrush/bluebunch wheatgrass, the fescue and wheatgrass may attain equal status. However, each species dominates on its own site.

While this site is in the same precipitation range as the threetip sagebrush/bluebunch wheatgrass site, it is higher, cooler, and occurs more in the upper half.

4. Soils

a The soils of this site are loamy to extremely gravelly loams. They are deep and well drained. The parent material is alluvium and colluvium from sedimentary and metamorphic rock. Gravels often exceed 60% by volume in the soil profile below a depth of 10-12".

b. Typical Soil Series Are:

Klug (FEID)
Zeebar (FEID)
Hoskin moist phase (FEID)
Vaysa (FEID)

5. Location of Typical Examples of Site:

a. Counties occuring in:

Idaho: Custer
Butte

B. Interpretations (Potential Importance for Major Uses)

1. Livestock Grazing

This site is best adapted to livestock grazing in the late spring, summer and fall. Water is usually available in nearby streams and springs.

In good to excellent condition this site produces an abundant amount of good forage. In poor condition this site is dominated by threetip sagebrush with a sparse understory of grasses.

2. Wildlife

Deer, antelope, elk, and bighorn sheep winter range contain this ecological site. The higher precipitation level promotes vegetational diversity and abundance, which in turn, promotes a wide variety of non-game wildlife.

3. Wild Horses

This site occurs throughout the Challis wild horse range and is an important source of forage for them.

4. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Idaho fescue	H	H	H	M	M	?	M
R	bluebunch wheatgrass	H	M	H	H	H	L	H
A	Nevada bluegrass	M	H	M	?	?	?	-
S	Sandberg bluegrass	L	H	L	H	M	M	L
S	bottlebrush squirreltail	L	L	L	L	L	L	-
E	prairie junegrass	M	H	M	L	M	?	-
S	needle-and-threadgrass	H	L	L	L	M	L	L
	Hoods phlox	-	-	M3	L	L	?	-
	astragalus	-	-	L	L	L	L	-
	death canas	-	-	-	L	?	?	-
F	musk phlox	-	-	-	L	L	?	-
O	cushion eriogonum	-	L	-	L	L	L	L
R	eriogonum	-	L	-	L	L	L	L
B	Indian paintbrush	-	-	-	L	L	?	-
S	tailcup lupine	-	L	-	M	H	L	?
	sego lily	L	L	-	?	L	?	-
	rose pussytoes	-	-	-	L	L	L	-
	tapertip hawksbeard	M	H	L	L	?	L	-
S	threetip sagebrush	L	L	L	M	M	L	-
H	grey horsebrush	-	L	-	L	L	?	-
R	shrubby eriogonum	L	L	-	L	L	M	L
U	green rabbitbrush	-	L	-	M	M	M	L
B	rubber rabbitbrush	-	L	L	M	M	M	-
S	broadleaf rabbitbrush	-	-	L	M	?	?	-
	prickly gilia	-	L	-	L	L	?	L

H=High
M=Moderate
L=Low
-=Not used
?=No data
1/ Based on fecal studies.
2/ Based on generalized relative sonsumptive rates from studies and research.
3/ Mostly in winter and spring.

* Interpretated mostly from Instruction Memo ID-78-132.

Site Name: Dry Gravelly 13-16" ppt. (33-40 cm) - ARTR4/AGSP Threetip sagebrush/ Bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial foothills, mountain slopes, and hillsides. Slopes are usually less than 30%. It occurs on all aspects and elevation ranges from 5500 to 7000 feet (1690-2150 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 13-16 inches (33-40 cm). Approximately 40-50% comes in the winter plant dormant period (October to March) and 50-60% during the plant growing season (April-September). May and June usually receive 25-30% of the annual precipitation.

b. Plant growth begins from April 1-May 1, and grasses and forbs are usually matured by July 15-August 1. Grass regrowth may occur if fall rains are sufficient. Shrubs continue to grow during the summer dormant period but at a reduced rate. The optimum plant growth period is from May 15 to July 1. The average frost-free period is 50-80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is threetip sagebrush and bluebunch wheatgrass. The composition is approximately 55-65% grass, 1-5% forbs, and 20-30% shrubs by weight.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac Air Dry	kg/ha Air Dry
Grasses		55-65	200-500	224-560
bluebunch wheatgrass	AGSP	40-50	150-400	168-449
Idaho fescue	FEID	5-10	30-100	34-112
Nevada bluegrass	PONE3	1-3	10-30	11-34
Sandberg bluegrass	POSE	2-5	10-40	11-45
bottlebrush squirreltail	SIHY	T-1	T-10	T-11
prairie junegrass	KOCR	1-3	10-30	11-34
needle-and-threadgrass	STCO4	T-1	T-10	T-11
sod wheatgrass	AGROP	0-2	0-20	0-22
Forbs		5-15	50-125	57-140
Hoods phlox	PHHO	1-5	10-50	11-57
astragalus	ASTRA	1-2	10-20	11-22
death camas	ZYPA	T-1	T-10	T-11
musk phlox	PHMU	T-2	T-20	T-22
cushion eriogonum	EROV	T-1	T-10	T-11
eriogonum spp.	ERIOG	T-1	T-10	T-11
Indian paintbrush	CASTI	1-2	10-20	11-22
tailcup lupine	LUCA	T-1	T-10	T-11
sego lily	CANU	T-1	T-10	T-11
rose pussytoes	ANRO	1-3	10-30	11-34
tapertip hawksbeard	CRAC2	T-3	10-30	11-34
other perennial forbs	PPFF	1-3	10-30	11-34
Shrubs		20-30	100-250	112-280
threetip sagebrush	ARTR4	15-25	75-200	84-224
grey horsebrush	TECA	1-2	10-20	11-22
shrubby eriogonum	ERIOG	1-2	10-20	11-22
tall green rabbitbrush	CHVI8	1-2	10-20	11-22
rubber rabbitbrush	CHNA	T-1	T-10	T-11
broadleaf rabbitbrush	CHVIP	T-1	T-10	T-11
plains prickly pear	OPPO	T-1	T-10	T-11
prickly gilia	LEPU	T-1	T-10	T-11

Total Potential Annual Production:

Favorable Years	900 lbs/ac air dry (1009 kg/ha)
Median Years	500 lbs/ac air dry (560 kg/ha)
Unfavorable Years	300 lbs/ac air dry (336 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 20-30%.

d. Variations

Idaho fescue occurs in this site and bluebunch wheatgrass occurs in the threetip sagebrush/Idaho fescue site. Each one dominates in its own site, however. In the transition between the two sites, they may attain equal dominance.

At the lower end of this site where precipitation and available water is less, there is a transition to the Wyoming big sagebrush site. Transition areas occur between threetip sagebrush/bluebunch wheatgrass sites and low sagebrush/bluebunch wheatgrass sites in the Little Lost-Birch Crrek area. These transition zones have plant species present typical of both sites.

4. Soils

a. The soils of this site are loamy to extremely gravelly loams. They are deep and well drained. The parent material is alluvium and colluvium from sedimentary and metamorphic rock. Gravels often exceed 60% by volume in the soil profile below a depth of 10-12".

b. Typical Soil Series Are:

Little Lost-Birch Creek	Challis
Firebox	Sink
	Zeebar dry phase
	Zeale warm phase
	Surrett dry phase
	Hoskin
	Reck
	Vano dry phase

5. Location of Site:

a. Typical Example:

SW¼NW¼, Section 7, T. 8 N., R. 30 E., Clark County, Idaho.

SW¼SW¼, Section 9, T. 10 N., R. 29 E., Butte County, Idaho.

b. Counties occuring in:

Idaho: Butte
Custer

B. Interpretations

1. Livestock Grazing

This site is best adapted to livestock grazing in the late spring, summer, and fall. Water is usually available in nearby streams or springs. Some areas, especially in limestone hills, may be lacking in natural water.

This site produces a good forage if range condition is good. If range condition declines due to livestock grazing, the sagebrush increases and the grass decreases.

The visual aspect of this site in poor condition is threetip sagebrush with a sparse absent grass understory.

2. Wildlife

This site provides spring, summer, and fall range to pronghorn antelope on the alluvial fan position. Antelope fawning occurs on this portion of the site. Deer use is slight in mild winters and moderate to heavy in severe winters.

Sage grouse strutting and brood-rearing occurs on this site. Raptors nest and hunt on this site. Many species of non-game mammals, birds, and reptiles utilize this site as yearlong habitat.

The forbs and succulent grasses are high protein and energy food sources to the wildlife in the spring and summer. Shrubs provide cover to the resident wildlife as well as food to antelope and wintering deer.

3. Recreation Value and Natural Beauty

Antelope and sage grouse hunting are the major recreation uses of this site. The site is mostly open space with smooth terrain, varied slopes, and low-growing vegetation. The sites high elevation and close proximity to good fishing streams gives it added general recreation value.

4. Threatened or Endangered Plants and Animals

None known.

5. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep 2/
G	bluebunch wheatgrass	H	M	H	H	H	L	H
R	Idaho fescue	H	H	H	M	M	?	M
A	Nevada bluegrass	M	H	M	?	?	?	-
S	Sandberg bluegrass	L	H	M	H	M	M	L
S	bottlebrush squirreltail	L	L	L	L	L	L	-
E	prairie junegrass	M	H	M	L	M	?	-
S	needle-and-threadgrass	H	L	L	L	M	L	L
	sod wheatgrass	H	M	M	?	?	?	-
	Hoods phlox	-	-	M3	L	L	?	-
	astragalus	-	-	L	L	L	L	-
F	death camas	-	-	-	L	?	?	-
O	musk phlox	-	-	L	L	L	?	-
R	cushion eriogonum	L	L	L	L	L	L	L
B	eriogonum	L	L	L	L	L	L	L
S	Indian paintbrush	-	-	-	L	L	?	-
	tailcup lupine	-	L	L	M	H	L	-
	sego lily	L	L	-	?	L	?	-
	rose pussytoes	-	-	-	L	L	L	-
	tapertip hawksbeard	M	H	-	L	?	L	-
	threetip sagebrush	L	L	L	M	M	L	-
S	grey horsebrush	-	L	-	L	L	?	-
H	shrubby eriogonum	L	L	-	L	L	M	L
R	tall green rabbitbrush	-	L	L	M	M	M	L
U	rubber rabbitbrush	-	L	L	M	M	M	-
B	broadleaf rabbitbrush	-	-	L	M	?	?	-
S	plains prickly pear	-	-	-	L	L	L	-
	prickly gilia	-	L	-	L	L	?	L

* Interpreted mostly from Instruction Memo Id-78-132.
1= Based on fecal studies.
2= Based on generalized relative consumption rates from studies and research.
3= Mostly winter and spring.
H= high
M= moderate
L= low
-= not used
?= no data

6. Seeding

Much of this site is adapted to range seeding with slight limitations due to low precipitation and gravelly soils. Steeper slopes of this site have a severe limitation for seeding.

7. Brush Management

Chemical treatment is best adapted to this site. As threetip is a semi-sprouter, above ground mechanical and burning usually result in resprouting.

8. Topography

Domestic livestock and wildlife can move freely over this site. Most of the terrain is smooth-to-rolling with gentle slopes. Occasionally, steep slopes may limit livestock movement dependent upon availability of water.

Site Name: Steep Limestone 16-22" ppt. (40-56 cm) CELE3/Feid
Curlleaf mountain mahogany/ Idaho fescue

A. Physical Characteristics

1. Physiographic Features

This site occurs on mountain slopes. It occurs on all aspects but primarily on north and easterly slopes. Elevation ranges from 7000 to 8000 feet (2150-2450 m) and slope varies from 10-50%.

2. Climatic Features

a. Annual precipitation of this site ranges from 16-22 inches (40-56 cm). Approximately 50-60% comes in the winter plant dormant period (October-April) and 40-50% during the plant growing season.

b. Plant growth begins about May 1-30. Grasses and forbs are usually mature by August 15. Shrubs continue to grow during the summer dormant period, but growth is reduced as soil moisture is depleted. Grasses may green up again when fall rains are sufficient.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is a dense stand of curlleaf mountain mahogany with an understory of Idaho fescue and some bluebunch wheatgrass. The composition of the understory is approximately 40-60% grass, 15-25% forbs, and 5-20% shrubs and trees.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY

Understory Composition and Production 1/

Common Name	Symbol	% Composition by weight	Range in Production 2/ lbs/ac Air dry	Range in Production 2/ kg/ha Air dry
Grasses		40-60	100-350	112-392
Idaho fescue	FEID	25-40	75-250	84-280
bluebunch wheatgrass	AGSP	5-10	20-75	22-84
prairie junegrass	KOCR	1-5	10-30	11-34
Rosses sedge	CARO	1-5	10-30	11-34
Nevada bluegrass	PONE3	1-3	10-25	11-28
other perennial grass	PPGG	1-3	10-25	11-28
Forbs		15-25	50-150	57-168
tapertip hawksbeard		2-10	10-50	11-57
rose pussytoes		1-5	10-30	11-34
arrowleaf balsamroot		1-5	10-30	11-34
lupine		1-2	10-15	11-17
erioginum		T-2	T-15	T-17
Hoods phlox		1-2	10-15	11-17
other perennial forbs		1-5	10-15	11-17
Shrubs		5-20	25-125	28-140
curlleaf mountain mahogany		1-10	10-75	11-84
mountain snowberry		1-5	10-30	11-34
mountain big sagebrush		1-5	10-30	11-34
tall green rabbitbrush		1-2	10-20	11-22

Total Average Annual Production:

Favorable Years	600 lbs/ac air dry (673 kg/ha)
Median Years	400 lbs/ac air dry (449 kg/ha)
Unfavorable Years	200 lbs/ac air dry (224 kg/ha)

1/ Includes mahogany individuals 4½ feet in height.
2/ The range in production relates to the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

Overstory Characteristics 1/

Canopy	Stems/AC	Live Green Herbage
40-70%		Estimated 1000-2000 lbs/ac total (1121-2242 kg/ha) Approximately 200-500 lbs/ac current year's growth (224-560 kg/ha)

1/ Mahogany trees greater than 4½ feet in height.

c. The vegetative cover of the understory is estimated to be 25-35%.

d. Variations

It is recognized that parts of this site may be seral to Douglas fir. Both usually occur in close proximity and the soils of both sites are very similar.

4. Soils

a. The soils of this site are deep to moderately deep, gravelly to extremely loams. Gravels can exceed 50% by volume in the lower ½ of the soil profile. Parent material is not often limestone, but granite and quartzite are also present.

b. Some Typical Soil Series Are:

Konian

5. Location of Site:

a. Counties site occurs in:

Custer

B. Interpretations (Potential importance for the major uses)

1. Livestock Grazing

This site is best suited for livestock grazing during the summer and fall. However, due to the steepness of most of its slopes, the dense stands of mountain mahogany, and a general lack of water, it doesn't receive much use.

In poor condition there is a sparse understory of grasses.

2. Wildlife

In the Challis area, in addition to elk (Willow Creek Summit), deer, bighorn sheep (Brick Creek herd), coyotes, a few bears, and an occasional lion use this site. The area provides habitat for a considerable number of non-game species such as marmots, rabbits, rattlesnakes and others.

3. Wild Horses

This site, where it occurs, in the horse range, is important in providing shelter for the horses during the winter months.

4. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Idaho fescue	H	H	H	M	M	?	M
R	bluebunch wheatgrass	H	M	H	H	H	L	H
A	prairie junegrass	M	H	M	L	M	?	-
S	Ross's sedge	M	M	L	M	H	M	-
S	Nevada bluegrass	M	H	M	?	?	?	-
E								
S								
	tapertip hawksbeard	M	H	-	L	?	L	-
F	rose pussytoes	-	-	-	L	L	L	-
O	arrowleaf balsamroot	L	H	-	M	M	L	-
R	lupine	-	L	L	M	M	L	L
B	erioginum	-	L	L	L	L	L	L
S	Hoods phlox	-	-	M3/	L	L	?	-
S	curlleaf mountain mahogany	L	L	-	H	M	?	-
H	mountain snowberry	L	L	-	M	L	H	-
R	mountain sagebrush	-	L	L	H	M	M	M
U	tall green rabbitbrush	-	L	L	M	M	M	-
B								
S								

* Interpreted mostly from Instruction Memo ID-78-132.
1/ Based on fecal studies.
2/ Based on generalized relative consumption rates from studies and research.
3/ Mostly winter and spring.
H=High
M=Moderate
L=Low
?=No data
-=Not used

5. Seeding

Seeding in this site is very limited due to steepness of the slopes and denseness of the mountain mahogany.

6. Brush Management

Management of brush in this site is very limited due to steepness of slope, and not usually desirable. Some cutting of mahogany may encourage new mahogany growth to benefit wildlife.

7. Topography

The steepness of slopes prevents free movement of livestock in this area. The availibility of water and open stands determine in large part whether or not this site gets used by livestock.

8. Woodland Values

The major use and importance at the present time is for firewood.

Site Name: Steep Limestone 13-16" (33-40 cm) ppt. - CELE3/AGSP Curlleaf Mountain mahogany/ bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on steep slopes associated with rock outcrops and talus. Slopes vary from 30-60%, and elevation ranges from 6500 to 8000 feet (1900-2450 cm). Aspect is primarily southerly or westerly.

2. Climatic Features

a. The annual precipitation of this site ranges from 13-16 inches (33-40 cm). Approximately 50% comes in the plant dormant period (October-March) and 50% in the plant growing season (April-September). May and June usually receive 25-30% of the annual precipitation.

b. Plant growth begins about April 15-May 1, and grasses and forbs are usually mature by July 15-30. The shrubs and trees continue to grow during the summer dormant period but at a much reduced rate. Grasses may green up again when fall rains are sufficient.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is a sparse to moderately dense stand of mahogany with bluebunch wheatgrass, and big sagebrush and/or black sagebrush in the understory. The composition by weight of the understory and mahogany reproduction less than 4½ feet in height, is approximately 40-60% grass, 10% forbs, and 30-40% shrubs and trees.

b. Plant species, percent composition by weight, and approximate production for the understory species are:

POTENTIAL NATURAL PLANT COMMUNITY

Understory Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production[1/] lbs/ac air dry	kg/ha air dry
Grasses		40-60	100-300	112-336
bluebunch wheatgrass	AGSP	30-50	80-200	90-224
needle-and-threadgrass	SYCO4	1-5	5-15	6-17
Indian ricegrass	ORHY	1-5	5-15	6-17
Sandberg bluegrass	POSE	1-2	5-10	6-11
Idaho fescue	FEID	T-2	T-10	T-11
prairie junegrass	KOCR	T-2	T-10	T-11
*Salmon wildrye	ELAM2	5-10	15-40	17-45
Forbs		5-10	15-50	17-56
arrowleaf balsamroot	BASA3	1-5	5-15	6-17
lupine spp.	LUPIN	1-2	5-10	6-11
lomatium spp.	LOMAT	T-1	T-5	T-6
Hoods phlox	PHHO	1-5	5-15	6-17
astragalus spp.	ASTRAG	T-1	5-10	6-11
rose pussytoes	ANRO2	1-3	5-10	6-11
other perennial forbs	PPFF	1-2	5-10	6-11
Shrubs		20-40	50-200	57-224
Curlleaf mountain mahogany (4½' ht.)	CELE3	10-20	30-75	34-84
**mountain big sagebrush	ARTRV	10-20	30-75	34-84
**Wyoming big sagebrush	ARTRW	10-20	30-75	34-84
**black sagebrush	ARARN	10-20	30-75	34-84
antelope bitterbrush	PUTR2	T-5	T-20	T-22
green rabbitbrush	CHVI8	1-2	5-10	6-11
prickly gilia	LEPU	T-2	T-10	T-11

Total Annual Production:

Favorable Years	500 lbs/ac	(560 kg/ha)
Median Years	300 lbs/ac	(336 kg/ha)
Unfavorable Years	200 lbs/ac	(224 kg/ha)

* Indigenous to the Challis-Salmon area on the lower elevations of this site.
** Usually one of the sagebrush species dominate in any one given location.

1/ The range shown approximates the variation within the plant community and the normal annual fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

Overstory Characteristics 1/

	Canopy	Trees/Ac.	lbs/ac air dry 2/
curlleaf mountain mahogany	10-30%	25-60	600-1500 lbs/ac

1/ Mahogany trees greater than 4½' in height.
2/ Total live non-woody biomass.

c. Total vegetative cover of the understory is estimated to be 15-20%.

d. Variations

The Salmon wildrye occurs only in the Salmon River area on the lower elevations of this site. Usually one of the three sagebrush species dominates in any given location for this site, but they can occur intermixed. This should be considered when rating ecological condition.

4. Soils

a. The soils of this site are loams, gravelly loams, and stony loams. Rock outcrops and talus are common. Sixty to ninety percent by volume gravels and/or stones are common below 30 inches in depth. Parent material is primarily limestone, however granitic and volcanic materials also occur.

b. Typical Soil Series Are:

Challis	Little Lost/Birch Creek
Gany	Torriorthents shallow to moderately deep. Mapping Unit75 E F & G
Konian dry phase	Cryoborolls shallow to moderately deep. Mapping unit32 F, G

5. Location of Site:

a. Counties site occurs in:

Custer
Butte

B. Interpretations

1. Livestock Grazing

This site is generally not well suited to livestock grazing. Steep slopes, lack of water, and rough and inaccessible terrain limit livestock use. This is a high value wildlife wintering site in specific areas, and livestock grazing, (where it is suitable) should be planned considering these values.

2. Wildlife

This site provides critical mule deer winter habitat. Mountain mahogany provides food and thermal cover. Sagebrush species are also important food sources for the wintering deer.

Light to moderate deer use occurs in the spring and summer when succulent grasses and forbs provide high protein feed. Doves, raptors, and songbirds nest in this site. White-tailed jack rabbits, snowshoe hares, pikas, and wood rats are abundant on this site throughout the year. Heavy elk use occurs on specific areas during the winter.

3. Recreation Value and Natural Beauty

Deer, antelope, and upland game bird hunting are the major recreation uses of this site. It also has value for rockhounding, hiking, and sightseeing.

The terrain is generally steep and rough, limiting many other recreational uses on much of this site.

4. Threatened or Endangered Plants and Animals

a. *Cryptlantha interrupta*

b. *Hymenopappus filifolius*, var. *idahoensis*

c. *Lesquerella carinata*

d. *Silene scaposa*, var. *lobata*

5. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	bluebunch wheatgrass	H	M	H	H	H	L	H
R	needle-and-threadgrass	H	L	L	L	M	L	L
A	Indian ricegrass	H	H	L	M	L	?	M
S	Sandberg bluegrass	L	H	M	H	M	M	L
S	Idaho fescue	H	H	H	M	M	?	M
E	prairie juregrass	M	H	M	L	M	?	-
S	Salmon wildrye	L	L	L	?	?	?	-
F	arrowleaf balsamroot	L	H	L	M	M	L	-
O	lupine spp.	-	L	L	M	M	L	L
R	lomatium spp.	-	-	-	M	?	M	M
B	Hoods phlox	-	-	M3/	L	L	?	-
S	astragaus spp.	-	-	L	L	L	L	-
	rose pussytoes	-	-	-	L	L	L	-
S	mountain mahogany	L	L	-	H	M	?	-
H	mountain big sagebrush	-	L	L	H	M	M	M
R	Wyoming big sagebrush	-	-	L	H	M	H	L
U	black sagebrush	L	L	L	L	?	M	-
B	antelope bitterbrush	M	M	-	H	H	?	-
S	green rabbitbrush	-	L	L	M	M	M	L
	prickly gilia	-	L	-	L	L	?	L

* Interpreted mostly from Instruction Memo ID-78-132.
1= Based on fecal studies.
2= Based on generalized relative consumptive rates from studies and research.
3= Mostly winter and spring.
H= High
M= Moderate
L= Low
-= Not used
?= No data

6. Seeding

Range seeding by conventional methods on this site is severely limited because of the steep, rocky terrain.

7. Brush Management

This practice is not normally desired or useful on this site.

8. Topography

The terrain on this site is steep (30-60% slopes) with numerous rock outcrops and talus slopes.

9. Wild Horses

Where this site occurs in the horse range, it provides shelter during the winter months.

Site Name: Fragile Lands 8" ppt (20 cm) - ATCO/ELAM2
Shadscale saltbush/
Salmon wildrye

A. Physical Characteristics

1. Physiographic Features

This site occurs on rolling hills and steep slopes. Slopes range from 10 to 75%. It can occur on any aspect, but more commonly occurs on southernly exposures. Elevation ranges from 5000 to 7000 feet (1530-2150 m).

2. Climatic Features

a. Annual precipitation averages less than 8 inches but can go as high as 12 inches at the higher elevations of this site. The total effective moisture from precipitation is very low due to low intake capabilities of the soils. Precipitation is about equally divided between the winter plant dormant period and the plant growing seasons.

b. This site remains relatively free of snow in the wintertime, and plant growth starts in March.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is barren ground with very sparse vegetation cover. Composition by weight is approximately 40-60% grass, 10-20% forbs, and 20-40% shrubs. The natural variability of production and species composition of this site is very high.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac Air Dry	Range in Production 1/ kg/ha Air Dry
Grasses		40-60	50-175	57-195
Salmon wildrye	ELAM2	30-50	40-150	45-168
bottlebrush squirreltail	SIHY	1-5	5-20	6-22
Sandberg bluegrass	POSE	1-5	5-20	6-22
Indian ricegrass	ORHY	10-20	10-75	11-84
bluebunch wheatgrass	AGSP	T-5*	T-20	T-22
Forbs		10-20	10-75	11-84
Hoods phlox	PHHO	2-10	10-35	11-39
false sunflower (rare)	ENNU	1-5	5-20	6-22
tufted evening primrose(rare)	OECA	1-5	5-20	6-22
penstemon	PENST	1-2	5-10	6-11
pursh loco milkvetch	ASPU9	1-5	5-20	6-22
erioginum	ERIOG	1-2	5-10	6-11
daisy	ERIGE	1-2	5-10	6-11
Salmon River crazyweed (rare)	OXBES	T-1	T-5	T-6
Idaho thelypody (rare)	THRE	T-1	T-5	T-6
other perennial forbs	PPFF	1-3	5-15	6-17
Shrubs		20-40	25-100	28-112
shadscale saltbush	ATCO	10-20	10-75	11-84
bud sagebrush	ARSP5	1-5	5-20	6-22
spiny hopsage	GRSP	T-2	T-10	T-11
Wyoming big sagebrush	ARTRW	1-5	5-20	6-22
tall green rabbitbrush	CHVI8	1-5	5-20	6-22
plains prickly pear	OPPO	T-2	T-10	T-11
slender erioginum	ERMI4	1-2	5-10	6-11

Total Average Annual Production:

Favorable Years	350 lbs/ac air dry (392 kg/ha)
Median Years	200 lbs/ac air dry (224 kg/ha)
Unfavorable Years	75 lbs/ac air dry (84 kg/ha)

* Bluebunch wheatgrass can be dominant in areas at the wettest end of this site but before Wyoming big sagebrush replaces the shadscale.

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

4. Soils

a. The soils of this sire are old exposed deposits of volcanic tuft. These materials were deposited, then covered with other soil material. Geologic uplift exposed these deposits as they are now. Organic matter content and water-holding capacity are very low. Texture varies from loam to very gravelly loam. The natural productivity potential of these soils is very low.

b. Typical Soils Are:

Frailton Saline phase
Flagton Saline phase
Xeric torriorthent subgroup

5. Location of Site:

a. Counties occurring in:

Idaho: Custer

B. Interpretations (Potential Importance for Major Uses)

1. Livestock Grazing

This site is not well adapted for livestock grazing due to the low productivity and fragile soils.

2. Wildlife

This is a very dry site and supports a very small compliment of wildlife. Mule deer spend considerable time on this site on sunny winter days as the slopes are usually free of snow.

3. Wild Horses

In the Challis wild horse range this site occurs mostly in the area around Birdie Peak which is between Lone Pine Peak and Grand View Canyon. At present, a group of about 10 horses spend 60% of its time in this area.

4. Watershed Values

This site has a very high natural erosion rate.

5. Recreation Value and Natural Beauty

This site is barren and arrid looking naturally. It is unappealing aesthetically to most viewers and gives one an impression of "badlands".

6. Threatened or Endangered Plants and Animals

Salmon wildrye (Elymus ambiguus salmonis) the major grass in this site is an endemic plant in the Challis area; however, it is quite common in the whole Challis area, occurring on two other sites at present, there are no officially nationally listed threatened or endangered plants for Idaho. There are some plants that occur on this site that are on a proposed list. They include Salmon River crazyweed (Oxytropis besseyi salmoneusis) and Idaho thelapody (Thelopodrum repandum).

7. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Salmon wildrye	L	L	L	?	?	?	-
R	bottlebrush squirreltail	L	L	L	L	L	L	-
A	Sandberg bluegrass	L	H	M	H	M	M	L
S	Indian ricegrass	H	H	L	M	L	?	M
S	bluebunch wheatgrass	H	M	H	H	H	L	H
E								
S								
	Hood's phlox	-	-	M3/	L	L	?	-
	false sunflower	-	-	-	?	?	?	-
F	tufted evening primrose	-	-	-	L	?	L	-
O	penstemon	L	L	-	L	L	L	-
R	pursh loco milkvetch	-	-	L	?	?	?	?
B	eriogonum	-	L	L	L	L	L	L
S	daisy	L	L	-	L	M	L	-
	Salmon river crazyweed	-	-	-	?	?	?	-
	Idaho thelopody	-	-	-	?	?	?	-
	shadscale saltbush	L	M	L	M	?	L	-
S	bud sagebrush	L	M	L	L	?	L	-
H	spiny hopsage	L	L	-	L	?	M	M
R	Wyoming big sagebrush	-	-	L	H	M	H	L
U	tall green rabbitbrush	-	L	L	M	M	M	L
B	plains prickly pear	-	-	-	L	L	L	-
S	slender eriogonum	L	M	-				

*= Interpreted mostly from Instruction Memo ID-78-132.
H= High
M= Moderate
?= No data
-= Not used
1/ Based on fecal studies.
2/ Based on generalized relative consumption rates from studies and research.
3/ Mostly winter and spring.

8. Seeding

This site is not well suited to seeding due to low precipitation and soils with very little productivity potential.

9. Brush Management

Brush management is not normally desired or useful on this site.

10. Topography

Domestic livestock, wild horses, and wildlife can move freely over this site.

Site Name: Saline Gravelly 8" ppt. (20 cm) - ATCO/ORHY/STCO4
Shadscale saltbush/
Indian ricegrass/
Needle-and-Threadgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial fans, mountain footslopes, and rolling hills. Elevation ranges from 4800 to 7000 feet. It is generally below 6200 feet in the Little Lost-Birch Creek area. It occurs on all aspects, however, it is more common on southwest or southeast facing alluvial fans.

2. Climatic Features

a. Annual precipitation of this site is usually 8 inches (20 cm) or less. Approximately 40-50% comes in the winter plant dormant period (October-March) and 50-60% during plant growing season (April-September). May and June usually receive 25-30% of the annual precipitation.

b. Plant growthbegins about March 20-April 15. Grasses and forbs are usually mature by July 20. Grasses may green up again when fall rains are sufficient. Shrubs continue to grow during the summer dormant period but a much reduced rate. The optimum plant growth period is normally from May 1 to June 30. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is shadscale saltbush with an understory of Indian ricegrass, needle-and-threadgrass, and bottlebrush squirreltail. The approximate composition by weight is approximately 40-50% shrubs, 40-50% grasses, and 5% forbs.

b. Plant species, percent composition by weight, and approximate production for each species are:

c. Vegetative cover is approximately 10-20%.

d. Variation

In transition zones this site is likely to have Wyoming big sagebrush and bluebunch wheatgrass intermixed with the shadscale. There are areas on the upper ends of this site where bluebunch wheatgrass (mitring soil) or Salmon wildrye occur with the shadscale.

The relative position of Indian ricegrass, needle-and-threadgrass, and bottlebrush squirreltail in the potential plant community is variable. In some areas one will dominate and in others another may dominate.

4. Soils

a. The soils of this site are gravelly loams to extremely gravelly loams. They are deep and well drained. They have rapid permeability. Gravels often exceed 50% by volume in the soil profile. Salt concentrations can occur at 12-15 inches in depth.

b. Typical Soil Series Are:

Challis	Little Lost-Birch Creek
Challis gravelly loam	Braithewaite gravelly loam
Levzig saline phase	Sparmo saline phase
Rosebriar saline phase	
Mitring	
Sactus	
Gradeo saline phase	
Venum saline phase	

5. Location of Typical Example of Site:

a. Typical example:

NW¼SW¼, Section 12, T. 6 N., R. 29 E., Butte County, Idaho

b. Counties occurring in:

Custer
Butte

B. Interpretation (Potential Importance for the Major Uses)

1. Livestock Grazing

This site is best adapted for livestock grazing in the spring, fall, and early winter. Natural water supplies are short or absent, and livestock water may have to be piped, hauled, or otherwise made available. The southern part of this site in the Little Lost/Birch Creek area has greater water problems than the northern portion.

Heavy use by sheep or wildlife in the fall and winter can reduce the vigor and abundance of the shadscale.

2. Wildlife

This site provides important winter habitat on southwest-facing slopes for antelope and mule deer. It also occurs along major antelope migration routes and fawning areas. The site is important to small mammal and bird species which become prey for numerous raptor species.

3. Recreation Value and Natural Beauty

Antelope hunting is the major recreation use of this site with sage grouse hunting and sighseeing being significant but of lesser importance. The site is mostly open space with smooth terrain, varied slopes, and low-growing vegetation providing an unobstructed view of the scenic mountains on both sides of the valleys.

4. Threatened or Endangered Plants and Animals

None known.

5. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Indian ricegrass	H	H	L	M	L	?	M
R	needle-and-threadgrass	H	L	L	L	M	L	L
A	Sandberg bluegrass	L	H	M	H	M	M	L
S	bluebunch wheatgrass	H	M	H	H	H	L	H
S	Nevada bluegrass	M	H	M	?	?	?	-
E	bottlebrush squirreltail	L	L	L	L	L	L	-
S	sand dropseed	L	-	L	L	?	M	-
	eriogonum	L	L	L	L	L	L	L
F	Hoods phlox	-	-	M3/	L	L	?	-
O	phlox spp.	-	-	M3/	L	L	?	-
R	torrey cryptantha	-	-	-	?	?	L	-
B	musk phlox	-	-	-	L	L	?	-
S	daisy	L	L	-	L	M	L	-
	astragalus	-	-	L	L	L	L	-
	shadscale saltbush	L	M	L	M	?	L	-
S	bud sagebrush	L	L	L	L	?	L	-
H	chicken sage	-	-	-	L	?	H	-
R	winterfat	H	H	L	M	L	L	-
U	green rabbitbrush	-	L	L	M	M	M	L
B	fringed sagebrush	-	-	L	M	?	L	-
S	Nuttall's saltbush	-	-	-	L	?	L	-
	dwarf goldenweed	-	-	-	L	?	L	-

* Interpreted mostly from Instruction Memo ID-78-132.
1/ Based on fecal studies.
2/ Based on generalized relative consumption rates from studies and research.
3/ Mostly winter and spring.
H=High
M=Moderate
L=Low
?=Nodata
-=Not used

6. Seeding

This site is not well suited to seeding due to low precipitation and salty soils.

7. Brush Management

Brush management is not normally desired or useful on this site.

8. Topography

Domestic livestock can move freely over this site. This site is located primarily on the east side of the Little Lost River valley and in the northeast part of the Challis Planning Unit. It ranges from the toe of the mountains to the valley floor. The steepest slopes occur adjacent to the USFS boundary but still allow free livestock movement.

Site Name: Saline Flat 8" ppt ATNU/ORHY
Nuttall's saltbush/
Indian ricegrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on level to gently sloping areas. Occasional overland flows deposit small amounts of alluvium. The site occurs on all aspects, and elevation ranges from 4700 to 5800 feet (1440-1780m).

2. Climatic Features

a. Annual precipitation of this site averages less than 8 inches. Approximately 40-50% comes in the winter plant dormant period (October to March) and 50-60% during the plant growing season (April to September). May and June usually receive 25-30% of the annual precipitation.

b. Plant growth begins from April 1 to April 15. Grass and forbs are usually mature by July 15. Grasses may green up again when late summer and fall rains occur. Shrubs continue to grow during the summer dormant period but at a much reduced rate. The optimum plant growth period is from May 1 to June 15. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is low-growing vegetation dominated by Nuttall's saltbush, shadscale saltbush, and Indian ricegrass. The composition is approximately 30-40% grass, 5% forbs, and 60-70% shrubs by weight.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY
COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac air dry	Range in Production 1/ kg/ha air dry
Grasses		30-40	100-250	112-280
Indian ricegrass	ORHY	20-30	75-200	84-224
Sandberg bluegrass	POSE	1-5	5-25	6-28
bottlebrush squirreltail	SIHY	5-10	15-60	17-67
Nevada bluegrass	PONE	T-3	T-15	T-17
sand dropseed	SPCR	0-1	0-10	0-11
needle-and-threadgrass	STCO4	5-10	15-60	17-67
Forbs		1-5	5-25	6-28
erigeron	ERIGE2	T-1	T-5	T-6
scarlet globemallow	SPCO	1-2	5-10	6-11
Hoods phlox	PHHO	1-3	5-15	6-17
other forbs	PPFF	1-2	5-10	6-11
Shrubs		60-70	200-450	224-502
Nuttall's saltbush	ATNU2	30-45	150-300	168-336
winterfat	EULA5	5-10	15-60	17-67
plains prickly pear	OPPO	T-1	T-5	T-6
bud sagebrush	ARSP5	T-5	T-20	T-22
shadscale saltbush	ATCO	10-15	30-75	34-84
spiny hopsage	GRSP	0-T	0-T	0-T
dwarf green rabbitbrush	CHVIP2	T-1	T-10	T-11
Wyoming big sagebrush	ARTRW	T-5	T-25	T-28

Total Annual Production: (air dry)

Favorable Years	650 lbs/ac (729 kg/ha)
Median Years	400 lbs/ac (449 kg/ha)
Unfavorable Years	300 lbs/ac (336 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not necessarily reflect the extremes in production.

d. Variation

This site has a broad transition with the Wyoming big sagebrush/bluebush wheatgrass site on the McCaleb Soil. The more moist, less saline portion of McCaleb fits in the lower portion of the Wyoming big sagebrush site. The drier, more saline portion fits this site. Wyoming big sagebrush occurs throughout this site. In the drier portions, it is confined to small depressions, but on the moister end of the site, it is sparsely interspersed throughout the site.

4. Soils

a. The soils of this site are deep and well drained. Textures range from loams to very gravelly loams in the surface and very gravelly to extremely gravelly loams to loamy coarse sands in the subsoil. Gravels exceeding 60% by volume are common in the subsoil. Roots are concentrated @ 3-12 inches in depth. The two limiting factors of these soils for native plant growth is the low rainfall and the occurrence of salts in the soil surface.*

b. Typical Soil Series Are:

Little Lost-Birch Creek	Challis
Usine	Challis saline phase
McCaleb	

5. Location of Site

a. Typical example:

NW¼NW¼, Section 35, T. 8 N., R. 28 E., Butte County, Idaho

b. Counties occuring in:

Custer
Butte

*Estimated - Soil lab data not available yet.

B. Interpretations

1. Livestock Grazing

This site is best suited to spring, fall, and winter livestock grazing. Natural water supplies over much of the site are short or absent, and livestock water may have to be piped, hauled, or otherwise made available.

If range condition declines due to livestock grazing, the perennial grass understory is eventually eliminated and the site is dominated by Nutalls saltbush, rabbitbrush, shadscale, saltbush, and other shrubs. This site recovers from poor condition very slowly due to the low precipitation and saline soils. Continued heavy livestock use will decrease the abundance and vigor of Nutalls saltbush.

2. Wildlife

The diversity of vegetation on this site provides important habitat to both large and samll wildlife species. Shrubs found within this type provide important food sources to wintering and fawning antelope. Nuttalls saltbush, winterfat, bud sagebrush, shadscale, and Wyoming big sagebrush combined with several species of grasses and forbs provide an important variety of forage species for migrating antelope, particularly during springtime. The vegetation variety provides important habitat for small and non-game wildlife species.

3. Watershed Values

4. Recreation Value and Natural Beauty

Antelope hunting is the major recreational use of this site. Sage grouse hunting is significant but of lesser importance. The site is open space with smooth terrain and low-growing vegetation providing an unobstructed view of the scenic mountains on both sides of the valleys.

5. Threatened or Endangered Plants and Animals

a. Cryptlantha interrupta

b. Hymenopappus filifolius, var. idahoensis

6. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Indian ricegrass	H	H	L	M	L	?	M
R	Sandberg bluegrass	L	H	M	H	M	M	L
A	bottlebrush squirreltail	L	L	L	L	L	L	-
S	Nevada bluegrass	M	H	M	?	?	?	-
S	sand dropseed	L	-	L	L	?	M	-
E	needle-and-threadgrass	H	L	L	L	M	L	L
S								
F	erigeron	L	L	-	L	M	L	-
O	scarlet globenallow	L	-	-	L	?	H	L
R	Hoods phlox	-	-	M 3/	L	L	?	-
B								
S								
	Nuttall's saltbush	-	-	L	L	?	L	-
S	winterfat	H	H	L	M	L	L	-
H	plains prickly pear	-	-	-	L	L	L	-
R	bud sagebrush	L	M	L	L	?	L	-
U	shadscale saltbush	L	M	L	M	?	L	-
B	spiny saltbush	L	L	-	L	?	M	M
S	dwarf green rabbitbrush	-	L	L	M	M	M	L
	Wyoming big sagebrush	-	-	L.	H	M	H	L

*=Interpreted mostly from Instruction Memo ID-78-132.
H=High
M=Moderate
L=Low
?=No data
-=Not used

1/ Based on fecal studies.
2/ Based on generalized relative consumptive rates from studies and research.
3/ Mostly winter and spring.

7. Seeding

This site is not well suited to reseeding due to the low precipitation and salts in the soil profile.

8. Brush Management

Brush management on this site is not normally needed or useful on this site.

9. Topography

The gentle undulating terrain of this site offers no restriction to the movements of grazing animals.

Site Name: Windswept 8-11 ppt. (20-28 cm) - TANU/ARFR4/POSE/STCO4 Chicken sage/Fringed sage/Sandberg bluegrass/ Needle-and-threadgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial fans, terraces, and ridges. It usually occurs on the windswept portion of the landscape gravels where gravels often exceed 60% by volume less than 10 inches deep in the soil profile. It occurs on all aspects and elevation ranges from 5400 to 7000 feet (1650-2150 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 8-11 inches (20-28 cm). Actual precipitation on surrounding sites may be significantly higher. The limiting climatic feature of this site is the wind blowing the precipitation over or past the site and high evaporation. Very little snow accumulates on this site (6 inches or less).

b. Plant growth begins about April 1-15. Grasses and forbs are usually mature by July 15. The average frost-free period is 80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is barren, open ground with very sparse, low-growing vegetation. The plant community is varied. The composition by weight averages approximately 30-40% grass, 25-35% forbs, and 25-40% shrubs.

b. Plant species, percent composition by weight, and approximate production for each species are:

POTENTIAL NATURAL PLANT COMMUNITY
COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ lbs/ac air dry	kg/ha
Grasses		30-40	25-100	28-112
Sandberg bluegrass	POSE	15-20	15-50	17-57
Swallen ricegrass (rare)	ORSW	5-10	5-25	6-28
needle-and-threadgrass	STCO4	10-15	10-50	11-57
bottlebrush squirreltail	SIHY	5-10	5-25	6-28
Indian ricegrass	ORHY	1-5	5-15	6-17
bluebunch wheatgrass	AGSP	T-1	T-5	T-6
Carex spp.	CAREX	0-3	0-10	0-11
Forbs		25-35	20-90	22-100
eriogonum spp.	ERIOG	5-10	5-25	6-28
crag aster	ASSC	T-5	T-10	T-11
Hoods phlox	PHHO	5-20	10-50	11-67
Pursh loco milkvetch	ASPU9	1-2	1-5	1-6
Kings sandwort	ARKI	1-2	1-5	1-6
Rydberg penstemon	PERY	2-5	5-15	6-17
wild onion	ALLUI	T-1	T-5	T-6
other perennial forbs	PPFF	1-3	1-10	1-11
Shurbs		25-40	20-100	28-112
chicken sage	TANU	10-20	10-50	11-57
shadscale saltbush	ATCO	5-10	5-25	6-28
black sagebrush	ARARN	T-2	T-10	T-11
bud sage	ARSP5	1-5	5-15	6-17
winterfat	EULA5	1-5	5-15	6-17
fringed sage	ARFR4	10-20	10-50	11-57
Wyoming big sagebrush (stunted)	ARTRW	1-5	5-15	6-17
stemless goldenweed	HAAC	1-5	5-15	6-17

Total Annual Production:

Favorable Years	300 lbs/ac air dry (336 kg/ha)
Median Years	150 lbs/ac air dry (168 kg/ha)
Unfavorable Years	75 lbs/ac air dry (84 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not necessarily reflect the extremes in production.

c. Vegetation cover is approximately 5-10%.

d. Variation

Vegetation composition varies widely on this site. In some area, fringed sage is the dominate shrub and in other areas chicken sage dominates, with all other combinations in between. Care must be taken when determining ecological condition to allow for these variations.

There are circular islands of Carex scattered through this site in the Challis area. It is assumed that they occurred similarly as patches in the original native climax condition.

4. Soils

a. The soils of this site are gravelly to extremely gravelly loams. Gravels 60% by volume or greater usually occur less than 10 inches deep in the soil profile on the smooth terrace and alluvial fan positions. On the brow of ridges (windswept position), gravels can occur at any depth. The windswept position results in the same low moisture effect as the shallow gravels on the level position.

The limiting factors for this site are the extremely low moisture availability and the high wind stress.

b. Typical soils series are:

Little Lost/Birch Creek	Challis
Windfall - windswept phase	Allhands dry phase
Lein - windswept phase	Dawtonia dry phase

5. Location of Site:

a. Typical example:

SW¼NW¼, Section 7, T. 8 N., R. 28 E., Butte County, Idaho

b. Counties occurring in:

Custer
Butte

B. Interpretations

1. Livestock Grazing

This site is not a high value area for livestock grazing due to the low production potential. Stocking rates are low and quality forage is available only for a short time in the spring.

Overgrazing by livestock reduces what little vegetation cover is available for this site.

2. Wildlife

This site provides yearlong range for pronghorn antelope. Deer and elk make slight to moderate use in specific area during the winter. Sage grouse brood-rearing occurs on this site. Raptors and carnivorous mammals hunt on this site. Non-game mammals, birds, and reptiles use this site as yearlong habitat. Chicken sage and fringed sage are preferred forage to antelope.

The windswept nature of these ridges allow access to the forage on this site to wintering wildlife. The wide variation in vegetative composition of this site with surrounding sites provides a high degree of edge effect to the resident wildlife.

Antelope use on this site is consistently moderate to heavy yearlong. Antelope fawns are born and reared on this site, and the forbs and succulent grasses provide high protein and energy food source to lactating antelope does.

3. Watershed Values

4. Recreation Value and Natural Beauty

Antelope hunting occurs on this site primarily as it is associated with surrounding sites. Probably the major recreation value of this site is that it provides unobstructed observation points for viewing the natural beauties of the surrounding area.

5. Threatened or Endangered Plants and Animals

a. *Cryptlantha interrupta*

b. *Hymenopappus filifolius*, var. *idahoensis*

6. Relative Forage Quality

	Common Name	Cattle*	Domestic Sheep*	Wild Horses1/	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep2/
G	Sandberg bluegrass	L	H	M	H	M	M	L
R	Swallen ricegrass	H	M	-	?	?	?	-
A	needle-and-threadgrass	H	L	L	L	M	L	L
S	bottlebrush squirreltail	L	L	L	L	L	L	-
S	Indian ricegrass	H	H	L	M	L	?	M
E	bluebunch wheatgrass	H	M	H	H	H	L	H
S	Carex spp.	M	M	L	M	H	M	-
	eriogonum	L	L	L	L	L	L	L
F	crag aster	-	-	-	M	M	M	-
O	Hoods phlox	-	-	M3/	L	L	?	-
R	Pursh loco milkvetch	-	-	L	L	L	L	-
B	Kings sandwort	-	-	-	?	?	?	?
S	Rydberg penstemon	L	L	-	?	?	?	-
	wild onion	L	L	-	L	L	L	-
	chicken sage	-	-	-	L	?	H	-
S	shadscale saltbush	L	M	L	M	?	L	-
H	black sagebrush	L	L	L	L	?	M	-
R	bud sage	L	M	L	L	?	L	-
U	winter fat	H	H	L	M	L	L	-
B	fringed sage	-	-	L	M	?	L	-
S	Wyoming big sagebrush	-	-	L	H	M	H	L
	stemless goldenweed	-	-	-	L	?	L	-

H=High
M=Moderate
L=Low
?=No data
-= Not used

1/ Based on fecal studies.
2/ Based on generalized relative consumption rates from studies and research.
3/ Mostly winter and spring.
* Interpreted mostly from Instruction Memo ID-78-132.

7. Seeding

There are severe limitations for range seeding on this site by conventional methods due to extremely gravelly shallow soils and harsh environment of the site.

8. Brush Management

This practice is not needed or useful on this site.

9. Topography

Topography is not restrictive to livestock or wildlife movement on this site.

Site: Saline Loamy 8-11 ppt. (20-28 cm) - SAVE/ELCI2
Black greasewood/
Basin wildrye

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial fans and bottoms, usually with less than 10% slope. It occurs on all aspects, and the elevation ranges from 5000 to 6500 feet (1530-1900 m).

2. Climatic Features

a. Annual precipitation of this site varies from 8-11 inches (20-28 cm). Approximately 50% of this comes in the winter plant dormant period (October to March) and 50% comes in the plant growing season (April to September). May and June usually receive 25-30% of the annual precipitation. Some additional moisture is received from spring runoff from adjacent areas or high water in the springtime.

b. Plant growth begins about April 1. The grasses and forbs are usually matured by July 15-30. The optimum plant growth period is from May 1 to June 15.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is black greasewood with an understory of basin wildrye and bottlebrush squirreltail. The composition is approximately 40-50% grass, 1-5% forbs, and 50-60% shrubs.

b. The following table shows the approximate composition by weight and air/dry weight production of the major species in the potential natural plant community.

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production 1/ 1lbs/ac Air Dry	Range in Production 1/ kg/ha Air Dry
Grasses		40-50	200-600	224-673
basin wildrye	ELCI2	20-30	100-300	112-336
thickspike wheatgrass	AGDA	1-5	10-50	11-57
western wheatgrass	AGSM	1-5	10-50	11-57
bottlebrush squirreltail	SIHY	10-20	50-200	57-224
Indian ricegrass	ORHY	1-5	10-50	11-57
bluebunch wheatgrass	AGSP	1-5	10-50	11-57
Sandberg bluegrass	POSE	1-5	10-50	11-57
needle-and-threadgrass	STOC4	1-5	10-50	11-57
Forbs		1-5	10-50	11-57
munro globemallow	SPMU2	1-3	10-35	11-39
other	PPFF	1-2	10-25	11-28
Shrubs		50-60	225-700	251-785
black greasewood	SAVE4	35-50	175-500	195-560
basin big sagebrush	ARTRT	1-5	10-50	11-57
dwarf green rabbitbrush	CHVIP2	1-2	10-25	11-28
spiny hopsage	GRSP	T-2	T-25	T-28
other shrubs	SSSS	1-2	10-25	11-28

Total Annual Production (Air Dry)

Favorable Years	1200 lbs/ac (1340 kg/ha)
Median Years	700 lbs/ac (785 kg/ha)
Unfavorable Years	400 lbs/ac (449 kg/ha)

1/ The range shown approximates the variation within the plant community and the normal fluctuation due to favorable and unfavorable growing seasons. It does not reflect the extremes in production.

c. Vegetation cover is approximately 30-40%.

d. Variations

Where this site transitions to the Wyoming big sagebrush/ bluebunch wheatgrass site, Wyoming sagebrush becomes more prevelant in the plant community.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. They are deep and well drained to moderately well drained. Sodium salts are prevelant throughout the soil profile.

b. Typical Soil Series Are:

Challis wet phase
Mathon

5. Location of Site:

a. Typical example:

b. Counties occuring in:

Idaho: Custer
Butte

B. Interpretations (Potential importance for its major uses.)

1. Livestock grazing

This site is very minor in the Challis Planning Unit and presently provides virtually no forage for livestock. In good to excellent condition it can provide excellent forage. In poor condition the site is dominated by black greasewood.

2. Wildlife

This site occurs on portions of some deer winter ranges. It's frequented by antelope, coyotes, jackrabbits, rattlesnakes, small rodents and a few non-game birds.

3. Watershed Values

4. Recreation Value and Natural Beauty

5. Threatened or Endangered Plants and Animals

None known.

6. Relative Forage Quality

	Common Name	Cattle	Domestic Sheep1/	Wild Horses	Mule Deer2/	Elk2/	Antelope2/	Bighorn Sheep 2/
GRASSES	basin wildrye	L	L		L	?	?	-
	thickspike wheatgrass	H	M		M	L	?	-
	western wheatgrass	H	M		L	H	H	-
	bottlebrush squirreltail	L	L		L	L	L	-
	Indian ricegrass	H	H		M	L	?	M
	bluebunch wheatgrass	H	M		H	H	L	H
	Sandberg bluegrass	L	H		H	M	M	L
	needle-and-threadgrass	H	L		L	M	L	L
FORBS	munro globemallow	-	-		?	?	?	-
SHRUBS	black greasewood	L	L		L	?	L	-
	basin big sagebrush	L	L		L	?	M	-
	dwarf green rabbitbrush	-	L		M	M	M	L
	spring hopsage	L	L		L	?	M	M

1/ Interpreted mostly from Instruction Memo ID-78-13.
2/ Based on generalized relative consumption rates from studies and resources.

H=High
M=Moderate
L=Low
?=No data
-=Not used

7. Seeding and Brush Management

In the Challis unit this site is not extensive enough to warrant any type of treatment.

8. Topography

There are no restrictions to movement of graying animals on this site.

APPENDIX 2-F

METHODOLOGY USED IN MAKING
VEGETATION IMPACT PREDICTIONS

Proposed Action

Through the allocation procedure, the levels of range users (i.e., livestock, wild horses, wildlife) were adjusted to enable the vegetation to maintain its vigor (See Appendices 2-A and 2-D). Appendix 2-D shows that the overall allotment level utilization rates for key species (i.e., 40% for summer use of bluebunch wheatgrass) are at a level that would not exceed the plant maintenance requirements of the species. As seen in Table 3-5, under present stocking rates trend is mostly static, so under decreased utilization levels the trend would go up.

Implementation of the grazing systems along with stocking adjustments would result in increased key species, higher condition class acreages, increased production, and alteration of vegetation structure. These conclusions are based on the results of monitoring studies of existing AMPs adjacent to the ES area and published literature. Data from existing AMPs on the Challis ES are not available.

The following example will illustrate predictions made for a typical rest rotation allotment:

As seen in Table 1-6, the Garden Creek allotment would have a four pasture rest rotation system. The Morgan Creek allotment, adjacent to the Garden Creek allotment, has been under a rest rotation system since 1969 (BLM, 1977). Although overall utilization levels for Morgan Creek are not known, no permanent livestock adjustments were made when the system was started. Because Morgan Creek is immediately adjacent to the Garden Creek allotment, the precipitation, soils and climate are very similar. Also, as seen in Table 3-4, the majority of Garden Creek is in poor to fair ecological condition. The pre-system ecological condition of the Morgan Creek allotment was also largely poor to fair.

The Morgan Creek Study showed an increase in the percent composition of key species from 20.4% to 25.6% in only five years (Morgan Creek AMP Evaluation. Unpublished. Available at Salmon District BLM). It is thought that the improvements after 15 years would be equivalent to an increase in one condition class from the present condition (poor condition should increase to fair, and fair should increase to good).

Thus, because the grazing systems would be similar and utilization rates would be lower, a conservative prediction is that all suitable areas in Garden Creek would increase one condition class in the 15 year time frame. The exception would be areas in poor condition which receive less than 13 inches of effective precipitation (it is thought that the productivity of the soils in these areas is low enough that this depleted range would not improve appreciably within the 15 year time frame). Unsuitable or potentially suitable would remain in the same condition class because the use levels in these areas would not decrease.

The following calculation for the Garden Creek allotment is illustrative:

Condition Class	Present		Future		Total Future as seen in Table 3-4 Acres
	Suitable	Unsuitable	Suitable	Unsuitable	
Good		699	4,327*	699	5,026
Fair	4,327*	12,399	688*	12,399	13,087
Poor	688*	8,300	0	8,300	8,300

*All the suitable acres increased one condition class.

Predicted production (See Table 3-8) of vegetation was based upon the potential productivity of the associated soils. During the 1977 range and soils inventory, it was found that certain soils would produce a certain amount (and kind of) vegetation in each condition class. This amount of production would be the same for any soils in an ecological site in the same condition class. By multiplying the predicted acreages of an ecological site (separated by condition class) times the productivity of that ecological site (also separated by condition class), the predicted productivity (by condition class) was found. For example, in the Garden Creek allotment, there are a total of 3,692 acres in the ARTR 4 ecological site. The predicted acreages by condition class within this site are as follows:

	Condition Class* Acres	Production by** Condition Class (lbs/acre)	Total*** Production (lbs)
Good	822	715	587,730
Fair	1,828	485	886,580
Poor	1,042	543	565,806
Total	3,692		2,040,116

* See Table 3-4
** See Appendix 2-A
***See Table 3-8

By totaling these figures for all ecological sites, the predicted production for the allotment was found.

To predict the changes in trend that would occur under the proposed action, all changes in condition were tabulated (as in Table 3-4). All acreages which raised in condition class were listed in upward trend. All other acreages were listed in static trend. For example, in the Garden Creek allotment, as seen above, 4,326 acres went from fair to good condition and 687 acres went from poor to fair. Thus, as seen in Table 3-5, 5,013 acres (4,326 + 687) were listed in upward trend.

The predicted changes in vegetation structure (Table 2-5) were also based on condition class changes. For example, as Garden Creek experienced an increase in the acreage of good condition, the acres in the grass/forb structure class would likewise increase (See Appendix 3-D). Climax communities in this allotment have higher grass/forb compositions.

The primary basis for the rest rotation system predictions was the Morgan Creek AMP. However, other studies in areas similar to Challis of rest rotation systems have shown similar results (Gibbons and Fisher, 1975; Johnson, W.M., 1965). Both of these studies were done in an area of Wyoming, having similar precipitation and soils.

Alternatives

The predictions under Alternative 1 were based upon current trend and condition data. The predictions for the other alternatives were based on the predictions under the proposed action. They were adjusted on the assumption that changes from the proposed action's predictions would be inversely proportional to the relative level of grazing by large ungulates. In other words, if the level of grazing was 1.5 times heavier under an alternative than under the proposed action, the forage production on the suitable area would be 1/1.5 or 67% of that on the suitable area under the proposed action.

Example:

Under the minimum constraints to livestock alternative, there is a 54% reduction for the Garden Creek allotment. Under the proposed action, the reduction is 64%. The ratio of this is 54/64 or 84%. Under the proposed action projections, 4,326 acres moved from fair condition to good condition, and 687 acres moved from poor to fair condition. Under the minimum constraints to livestock alternatives, the changes would be 84% of those under the proposed action. The result is that 3,634 acres would move

from fair to good, and 455 would move from poor to fair. Adding the 3,634 acres to the 699 acres already in good condition yields 4,333 acres in good condition (See Table 8-19). Continuing this process, it was found that there would be 13,547 acres in fair condition and 8,533 acres in poor condition.

During this process, 4,089 acres improved in condition. Thus, these were put in upward trend. The remaining acreages were listed as static.

This same procedure was followed in finding predictions in forage production, as well as all other projections for the remaining alternatives.

Other Reference Cited:

Gibbers, R. P., and Fisser, H. G. 1975. Influences of Grazing Management Systems on Vegetation in the Red Desert Region of Wyoming. Laramie: University of Wyoming.

APPENDIX 3-A

SOILS CLASSIFICATION SYSTEM

Category	Number of Taxa	Nature of Differentiating Characteristics
Order	10	Soil-forming processes as indicated by presence or absence of major diagnostic horizons.
Suborder	47	Genetic homogeneity. Subdivision of orders according to presence or absence of properties associated with wetness, soil moisture regimes, major parent material, and vegetational effects as indicated by key properties; organic fiber decomposition stage in Histosols.
Great group	225* (Approx.)	Subdivision of suborders according to similar kind, arrangement, and degree of expression of horizons, with emphasis regimes; presence or absence of diagnostic layers (plinthite, fragipan, duripan).
Subgroup	970*	Central concept taxa for great group and properties indicating intergradations to other great groups, suborders, and orders; extragradation to "not soil".
Family		Properties important for plant root growth; broad soil textural classes averaged over control section or solum; mineralogical classes for dominant mineralogy of solum; soil temperature classes (based on mean annual soil temperature at 50 cm (20" depth).
Series	10,500* (Approx.) in U. S.	Kind and arrangement of horizons; color, texture, structure, consistence, and reaction of horizons; chemical and mineralogical properties of the horizons.

Sources: Boul, S. W., Hole, F. D., and McCracken, R. J. 1973. Soil Genesis and Classification. Ames, Iowa; Iowa State University Press. pp. 199.

*Soil Survey Staff. 1975. Soil Taxonomy. U. S. Dept. of Agriculture, SCS, Agriculture Handbook No. 436.

APPENDIX 3-B

SEDIMENT YIELD FACTOR RATING

In the Pacific Southwest Interagency Committee (PSIAC) method of estimating sediment yields, nine factors are considered in determining the sediment yield rating (see attached form). The sediment yield characteristic of each factor is assigned a numerical value representing its relative significance in the yield rating. The sediment yield rating is the sum of values for the appropriate characteristics for each of the nine factors. Conversion of the numerical rating to sediment yield is made using a graph (see BLM form 7310-16).

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SEDIMENT YIELD FACTOR RATING

SURFACE GEOLOGY (a)	SOILS (b)	CLIMATE (c)	RUNOFF (d)	TOPOGRAPHY (e)
(10) a. Marine shales and related mudstones and siltstones	(10) a. Fine textured; easily dispersed; saline-alkaline; high shrink-swell characteristics b. Single grain silts and fine sands	(10) a. Storms of several days' duration with short periods of intense rainfall b. Frequent intense convective storms c. Freeze-thaw occurrence	(10) a. High peak flows per unit area b. Large volume of flow per unit area	(20) a. Steep upland slopes (in excess of 30%) b. High relief; little or no floodplain development
(5) a. Rocks of medium hardness b. Moderately weathered c. Moderately fractured	(5) a. Medium textured soil b. Occasional rock fragments c. Caliche layers	(5) a. Storms of moderate duration and intensity b. Infrequent convective storms	(5) a. Moderate peak flows per unit area b. Moderate volume of flow per unit area	(10) a. Moderate upland slopes (less than 20%) b. Moderate fan or floodplain development
(0) a. Massive, hard formations	(0) a. High percentage of rock fragments b. Aggregated clays c. High in organic matter	(0) a. Humid climate with rainfall of low intensity b. Precipitation in form of snow c. Arid climate, low intensity storms d. Arid climate; rare convective storms	(0) a. Low peak flows per unit area b. Low volume of runoff per unit area c. Rare runoff events	(0) a. Gentle upland slopes (less than 5%) b. Extensive alluvial plains
Factor value				

GROUND COVER (f)	LAND USE (g)	UPLAND EROSION (h)	CHANNEL EROSION AND SEDIMENT TRANSPORT (i)
(10) Ground cover does not exceed 20% a. Vegetation sparse; little or no litter b. No rock in surface soil	(10) a. More than 50% cultivated b. Almost all of area intensively grazed c. All of area recently burned	(25) a. More than 50% of the area characterized by rill and gully or landslide erosion	(25) a. Eroding banks continuously or at frequent intervals with large depths and long flow duration b. Active headcuts and degradation in tributary channels
(0) Cover not exceeding 40% a. Noticeable litter b. If trees present understory not well developed	(0) a. Less than 25% cultivated b. 50% or less recently logged c. Less than 50% intensively grazed d. Ordinary road and other construction	(10) a. About 25% of the area characterized by rill and gully or landslide erosion. b. Wind erosion with deposition in stream channels	(10) a. Moderate flow depths, medium flow duration with occasionally eroding banks or bed
(−10) a. Area completely protected by vegetation, rock fragments, litter b. Little opportunity for rainfall to reach erodible material	(−10) a. No cultivation b. No recent logging c. Low intensity grazing	(0) a. No apparent signs of erosion	(0) a. Wide shallow channels with flat gradients and short flow duration b. Channels in massive rock, large boulders, or well vegetated c. Artificially controlled channels
Factor value			

Subtotal (a) − (g) | Subtotal (h) − (i) | TOTAL RATING − − − = − −. − ac.ft./sq. mi./yr.

(Instructions on reverse)

Form 7310−16 (July 1971)

APPENDIX 3-C

SUMMARY OF SOIL CHARACTERISTICS
CHALLIS UNIT

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Challis	Durixerollic Calciorthid, loamy-skeletal, mixed, frigid	alluvial fans & colluvial slopes 0 - 50	mixed alluvium & igneous & sedimentary colluvium	loam, gravelly loam, & very gravelly loam	very gravelly sandy loam, & very gravelly loam	60+	low	moderate to moderately rapid	slow to rapid	moderate
Allhands	Haploxerollic Durorthid, loamy-skeletal, mixed, frigid, shallow	alluvial fans 0 - 20	mixed alluvium mainly from limestone and dolomite	very gravelly loam	very gravelly loam	10 - 20	very low	moderate	slow to medium	high
Instalay	Haploxerollic Durorthid, loamy-skeletal, mixed, frigid	alluvial fans & colluvial slopes 0 - 30	mixed alluvium & colluvium, mainly from limestone & dolomite	gravelly loam	very gravelly loam & very gravelly sandy loam	20 - 40	very low	moderate to moderately rapid	slow to medium	moderate
Levzig	Durixerollic Haplargid, loamy-skeletal, mixed frigid	hills, colluvial slopes & alluvial fans 0 - 50	lava, ranging in composition from rhyolite to basalt, tuff and welded tuff	gravelly loam	very gravelly loam and very gravelly clay loam	60	low	moderate to moderately slow	slow to rapid	high
Venum	Durixerollic Haplargid, clayey-skeletal, montmorillonitic, frigid	hills, colluvial slopes & alluvial fans 0 - 50	lava, ranging in composition from andesite to basalt, quartzite, conglomerate, and tuff	loam & clay loam to very gravelly loam & very gravelly clay loam	very gravelly clay loam & very gravelly clay	60	low	slow	medium to rapid	high
Flagton	Xerollic Calciorthid, loamy-skeletal, mixed, frigid, shallow	low hills 20 - 50	tuff, welded tuff, sandstone, & siltstone	gravelly loam	very flaggy loam	10 - 20	very low	moderate	medium to rapid	high
Gradco	Xerollic Camborthid loamy-skeletal, mixed, frigid	low hills 5 - 50	tuff, welded tuff, sandstone, & siltstone	gravelly loam & very gravelly loam	very flaggy loam	20 - 40	low	moderate	medium to rapid	high

APPENDIX 3-C (Cont.)

SUMMARY OF SOIL CHARACTERISTICS
CHALLIS UNIT

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Katz	Lithic Xerochrept, loamy, mixed, frigid	foothills 20 - 60	lava ranging in composition from rhyolite to andesite	gravelly loam & very gravelly loam	gravelly loam & gravelly coarse sandy loam	10 - 20	very low	moderate to moderately rapid	medium to rapid	high
Hoskin	Typic Argixeroll, loamy-skeletal, mixed, frigid	foothills 20 -60	lava ranging in composion from rhyolite to andesite	gravelly loam	very gravelly loam	20 - 40	low	moderate	medium to rapid	moderate
Pecture	Typic Xerochrept, loamy-skeletal, mixed, frigid	foothills 20 - 60	slate & lava ranging in composition from rhyolite to andesite	very slaty loam	very slaty loam	60	low	moderate	medium to rapid	high
Sink	Typic Argixeroll, loamy-skeletal, mixed, frigid	foothills 2 - 60	slate & lava ranging in composition from rhyolite to andesite	slaty loam & very slaty loam	very slaty loam	60	ow	moderate	medium to rapid	oderate
Reck	Mollic Cryoboralf, clayey-skeletal, montmorilloritic	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt, conglomerate, tuff & welded tuff	gravelly & very gravelly loam to clay loam	very gravelly clay loam & very gravelly clay	60	medium	slow	medium to very rapid	high
Sleep	Argic Cryoboroll, clayey-skeletal, montmorillonitic	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt, conglomerate, tuff & welded tuff	gravelly loam	very gravelly clay loam & very gravelly clay	60	medium	slow	medium to rapid	moderate
Stupile	Argic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt	very gravelly loam	very gravelly loam & very gravelly clay loam	20 - 40	low	moderate to moderately slow	slow to rapid	moderate

APPENDIX 3-C (Cont.)

SUMMARY OF SOIL CHARACTERISTICS
CHALLIS UNIT

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Jonda	Mollic Cryoboralf, loamy-skeletal, mixed	foothills & mountains 2 - 60	lava ranging in composition from rhyolite to basalt, tuff & welded tuff	gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	high
Zeebar	Argic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	lava, ranging in composition from rhyolite to basalt, tuff, welded tuff, sandstone & siltstone	gravelly loam & very gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	moderate
Brabas	Mollic Cryoboralf, fine, montmorrillonitic	foothills 0 - 50	tuff, welded tuff, siltstone, & dolomite	loam	clay loam & clay	60	high	slow	slow to rapid	high
Unnamed	Typic Cryochrept, loamy or clayey-skeletal, mixed	foothills, mountain tops, & ridges 2 - 20	lava, ranging in composition from rhyolite to basalt, limestone & dolomite	very gravelly & very cobbly loam to clay loam	very gravelly & very cobbly loam to clay loam	20 - 60	very low	moderate to slow	slow to medium	moderate to high
Zeale	Calcic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	limestone & dolomite	gravelly loam & very gravelly loam	very gravelly loam & very gravelly sandy loam	60	low	moderate to moderately rapid	slow to rapid	moderate
Nitchly	Typic Cryochrept, loamy-skeletal, carbonatic	foothills & mountains 5 - 60	limestone & dolomite	very gravelly loam	very gravelly loam	60	low	moderate	slow to rapid	moderate
Meeger	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	limestone & dolomite	gravelly loam	very gravelly loam	60	high	moderate	slow to rapid	slight

APPENDIX 3-C (Cont.)

SUMMARY OF SOIL CHARACTERISTICS
CHALLIS UNIT

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Konian	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	foothill & mountain slopes 20 - 60	limestone & dolomite	loam & gravelly loam	very gravelly loam & very gravelly sandy loam	60	medium	moderate to moderately rapid	slow to rapid	slight
Vaysa	Argic Pachic Cryoboroll, loamy-skeletal mixed	foothills & mountains 5 - 60	lava, ranging in composition from rhyolite to basalt, argillite, & shale	gravelly loam & very gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	slight
Lopine	Typic Cryochrept, loamy-skeletal, mixed	foothill & mountain slopes 20 - 60	lava, ranging in composition from rhyolite to basalt, argillite, shale, slate, & quartizite	gravelly loam	very gravelly loam & very gravelly sandy loam	60	low	moderate to moderately rapid	slow to rapid	slight
Hamtah	Argic Pachic Cryoboroll, clayey-skeletal, montmorillonitic	foothills & mountains 2 - 50	andesite, basalt, tuff, quartzite & breccia	loam & gravelly loam	very gravelly clay loam & very gravelly clay	60	high	slow	slow to rapid	moderate

APPENDIX 3-D

SOIL MAP UNITS AND ACRES WITHIN
THE CHALLIS ES AREA
(ALL OWNERSHIP)

Soil Map Unit		Acres	Percent of Total
1.	Challis	17,440	4.9
2.	Challis-Allhands-Instalay	31,796	9.0
3.	Levzig-Venum	51,694	14.7
4.	Flagton-Gradco	40,373	11.5
5.	Katz-Hoskin	11,882	3.4
6.	Pecture-Sink	11,204	3.2
7.	Reck-Sleep-Stupile-Jonda	20,870	5.9
8.	Zeebar-Jonda-Brabas	18,515	5.3
9.	Zeale-Nitchly-Meeger-Konian	44,302	12.6
10.	Vaysa-Sleep-Stupile	51,036	14.5
11.	Lopine-Vaysa	21,503	6.1
12.	Lopine-Rubbleland-Zeebar	12,580	3.6
13.	Lopine-Cryoborolls-Hamtah	18,687	5.3
	Total Acres	352,182	100.0%

APPENDIX 4

The 291 terrestrial wildlife species (72 mammals, 204 birds, 15 amphibians and reptiles) can be placed into like groups dependent on the life requirements of reproduction and feeding requirements. The groups will be referred to for ease of consolidating impacts to wildlife species. Possible life forms are as follows:

LIFE FORMS

No.	Reproduces	Feeds	
1.	In water.	A.	In water.
2.	On ground around water or on floating or emergent vegetation.	B.	On ground, in bushes, and/or trees.
3.	In cliffs, caves, rims, and/or tallus.	C.	In water, on ground, in bushes and trees.
4.	On ground without specific water, cliff rim or tallus association.	D.	On ground or in air.
5.	In bushes.	E.	On ground.
6.	Primarily in deciduous trees.	F.	In bushes, trees, or air.
7.	Primarily in conifers.	G.	On ground, in water or air.
8.	In trees, non-specific.	H.	On ground, in bushes, trees or air.
9.	Excavates own hole in a tree.	I.	On ground or in water.
10.	In a hole made by another species or naturally occurring.	J.	On or under ground.
11.	Underground burrow.		

APPENDIX 4-A

REPTILES AND AMPHIBIANS OF THE CHALLIS ES AREA

Species		Alpha Code	Life Form		Relative Abundance	Classification	Habitat Occurrence														Impacts resulting from disturbance of vegetation and/or presence of livestock
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Spotted Frog	Rana pretiosa	Rapr	1	I	C	UP												X O	 O	IF, C1, C3, C4
Leopard Frog	Rana pipiens	Rapi	1	A	C	UP												X O	 O	IF, C1, C3, C4
Western Toad	Bufo boreas	Bubo	1	I	U	UP												X O	 O	IF, C1, C3, C4
Woodhouse's Toad	Bufo woodhousei	Buwo	1	E	U	UP								O				X O	 O	IF, C1, C3, C4
Northern Long-toed Salamander	Ambystoma macrodactylum	Amma	1	E	U	UP	O	O	O	O	O	O						X O	 O	C1, C4
Blotched Tiger Salamander	Ambystoma tigrinum	Amti	1	E	U	UP								X				X O	 O	C1, C4
Sagebrush Lizard	Sceloporus graciosos	Scgr	4	E	C	UP	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O		X O	IF, C1, C3, C4
Shorthorned Lizard	Phrynosoma douglassi	Phdo	4	E	C	UP	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O		X O	IF, C1, C3, C4
Western Skink	Eumeces skiltonianus	Fusk	4	E	U	UP	X O	X O	X O	X O	X O	X O		X O				X O	X O	IF, C1, C3, C4
Rubber Boa	Charina bottae	Chbo	4	E	U	UP							X O	X O				X O	X O	IF, C1, C3, C4
Copher Snake	Pituophis melanoleucus	Pime	4	E	C	UP							X O	X O				X O	X O	IF, C1, C3, C4

APPENDIX 4-A (Cont.)

REPTILES AND AMPHIBIANS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/													Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Western Garter	Thamnophis elegans	Thel	2	I	C	UP								X O				X O	X O	IF, C1, C3, C4
Common Garter	Thamnophis sirtalis	Thsi	2	I	C	UP								X O				X O	X O	IF, C1, C3, C4
Western Rattlesnake	Crotalis viridis	Crvi	3	E	C	UP	X O	X O	X O	X O	X O	X O			X O	X O	X O	X O	X O	IF, C1, C3, C4
Smooth Green Snake	Opheodrys vernalis	Opve	2	E	R	UP												X O	X O	IF, C1, C3, C4

1/ Bernard, Stephen R. and Kenneth F. Brolon 1977. Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A. W. Kuchler's Associations for the Eleven Western States. Tech. Note 301. US Department of the Interior, Bureau of Land Management.

2/ Refer to Appendix for Life Form descriptions.

3/ A = Abundant - Observed everytime a person visits its habitat at the proper season.
C = Common - Observed most of the time a person visits habitat at the appropriate season.
U = Uncommon - Not observed regularly in its habitat. Habitat may be limited.
R = Rare - Rarely observed. Species occupies a small percentage of its preferred habitat or habitat is extremely limited.

4/ G = Game Animal
F = Fur Bearer
P = Predatory Animal
GB = Game Bird
g = Protected Non-game
UP = Unprotected
S = Sensitive Species

5/ X = Reproduction
O = Feeding

6/ DF = Direct Food Competition
IF = Indirect Food Competition
W = Competition for Water
B = Competition Creates Behavorial Impacts
C = Competition for Cover
C1 = Resting Cover
C2 = Nesting Cover
C3 = Thermal Cover
C4 = Escape Cover

APPENDIX 4-B

BIRDS OF THE CHALLIS ES AREA

SPECIES 1/		ALPHA	LIFE FORM 2/		RELATIVE	CLASSI-	SEASON	NESTING HABITS 6/						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME	CODE 1/	REPRO-DUCES	FEEDS	ABUNDANCE 3/	FICATION 4/	OF OCCURRENCE 5/	GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Common Loon	Gavia immer	Gaim	2	A	R		M			C2,C3,C4						Fish	
Eared Grebe	Podiceps caspicus	Poca	2	A	R		M			C2,C3,				Aquatic		Aquatic Animals	
Horned Grebe	Podiceps auritus	Poau	2	A	U		M			C2,C3				Aquatic		Aquatic Animals	
Western Grebe	Aechmophorus occidentalis	Aeoc	2	A	R		M			C2,C3				Aquatic		Aquatic Animals	
Pied-billed Grebe	Podilymbus podiceps	Popo	2	A	R		S			C2,C3				Aquatic		Aquatic Animals	
Great Blue Heron	Ardea herodias	Arhe	3	A	C		S				C2 cot-tonwood					Fish	
Blackcrowned Night Heron	Nycticorax nycticorax	Nyny	8	I	R		S				C2	C2				Fish, Amphib. Reptiles, Mice	
Snowy Egret	Lucophoyx thula	Luth	2	I	U		S					C2		X		Fish, Amphib. mice, reptiles	
American Bittern	Botaurus lentiginosus	Bole	2	C	U		M			C2,C3,C4				X		molluska	
Wood Ibis	Mycteria americana	Myam	2	I	R		S			C2				X			
Whistling Swan	Olor columbianus	Olco	2	I	R		M			C2				X			X
Canada Goose	Branta canadensis	Brca	2	I	C	GB	YL	C2		C2	C2			X			X
White-fronted Goose	Anser albifrons	Anal	2	I	R	GB	M							X			X
Snow Goose	Chen hyperborea	Chhy	2	I	U	GB	M							X			X
Mallard	Anas platyrhynchos	Anpl	2	A	A	GB	YL	C2		C2				Aquatic			Aquatic X
Gadwall	Anas strepera	Anst	4	A	R	GB	M-S	C2		C2				Aquatic			Aquatic Aquatic
Pintail	Anas acuta	Anac	2	I	U	GB	M-S	C2		C2							X
Green-winged Teal	Anas carolinensis	Anca	2	A	U	GB	YL	C2						Aquatic			Aquatic

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Blue-winged Teal	Anas discors	Andi	2	A	U	GB	M-S	C2		C2				Aquatic			Aquatic
Cinnamon Teal	Anas cyanoptera	Ancy	2	A	U	GB	M-S	C2		C2				Aquatic			Aquatic
American Widgeon	Mareca americana	Maam	2	I	U	GB	YL	C2		C2				Aquatic			X
Shoveler	Spatula clypeata	Spcl	2	A	U	GB	M-S			C2				X			Aquatic
Wood Duck	Aix sponsa	Aisp	10	I	R	GB	M				C2 cavity boxes			X			Aquatic
Redhead	Aythya americana	Ayam	2	A	U		M-S			C2				Aquatic			Aquatic
Ring necked Duck	Aythya collaris	Ayco	2	I	U		M-S	C2		C2				Aquatic			Aquatic
Canvasback	Aythya valisineria	Ayva	2	A	U		M-W			C2				Aquatic			Aquatic
Lesser Scaup	Aythya affinis	Ayaf	2	A	U		M-S	C2		C2				Aquatic			Aquatic
Common Goldeneye	Bucephala clangula	Bucl	8	A	C		M-W	C2			C2 cavity					Aquatic Animals	
Barrow's Goldeneye	Bucephala islandica	Buis	8	I	R		YL				C2 cavity					Aquatic Animals	
Buffle Head	Bucephala albeola	Bual	8	A	R		M-W	C2			C2 cavity					Aquatic Animals	Aquatic X
Ruddy Duck	Oxyura jamaicensis	Oxja	2	A	U		M-S			C2							Aquatic X
Hooded Merganser	Lophodytes cucullatus	Loco	10	A	R		M-W				C2 cavity					Fish	
Common Merganser	Mergus merganser	Meme	4	A	U		M-W				C2 cavity					Fish	
Turkey Vulture	Cathartes aura	Caau	4	E	R		M-S	C1,C2	C1,C2		C1,C2,C3 stumps					Carron	
Goshawk	Accipiter gentilis	Acge	7	B	R		YL				C1,C2,C3 conifer	C2 riparian				X	
Sharpshinned Hawk	Accipiter striatus	Acst	7	B	R		M-S				C1,C2,C3 old crow & hawk nests	C2 riparian				X	

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA	LIFE FORM		RELATIVE	CLASSI-	SEASON	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME	CODE	REPRO-DUCES	FEEDS	ABUNDANCE	FICATION	OF OCCURRENCE	GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Cooper's Hawk	Accipiter cooperii	Acco	H	H	R		M-S				C1,C2,C3 conifers					X	
Red Tailed Hawk	Buteo jamaicensis	Buja	3	E	U		YL		C1,C2,C3		C1,C2,C3					X	
Swainson's Hawk	Buteo swainsoni	Busw	2	E	R		M-S					C2 riparian				X	
Rough-legged Hawk	Buteo lagopus	Bula	2	E	U		M-W									X	
Golden Eagle	Aquila chrysaetos	Aqch	3	E	U		YL		C1,C2		C1,C2,C3					X	
Bald Eagle	Haliaeetus leucocephalus	Hale	8	I	U	E/P	M-W				C1,C2					Fish Carrion	
Marsh Hawk	Circus cyaneus	Cicy	4	E	U		YL	C2		C2						X	
Osprey	Pandion haliaetus	Paha	8	A	R	S	M-S	C2			C1,C2					Fish	
Peregrine Falcon	Falco peregrinus	Fape	3	D	R	E/P	M-S		C2							X Birds	
Prairie Falcon	Falco mexicanus	Fame	3	D	R		M-S		C2							X	
Pigeon Hawk	Falco columbarius	Faco	8	D	R	S	M-S									X Birds	
American Kestrel	Falco sparverius	Fasp	10	E	C		M-S		C2		C1,C2,C			X		X	
Blue Grouse	Dendragapus obscurus	Deob	4	E	C	GB	YL	C2				C3,C4		X	X		X
Spruce Grouse	Canachites canadensis	Caca	4	E	R	GB	YL	C2			C3,C4	C4		X	X		X
Ruffed Grouse	Bonasa umbellus	Boum	4	E	U	GB	YL	C2				C3,C4		X	X		X
Sage Grouse	Centrocercus urophasianus	Ceur	4	E	C	GB	YL	C2				C3,C4		X	X		X
Ring-necked Pheasant	Phasianus colchicus	Phco	4	E	C	GB	YL	C2		C3,C4		C3,C4		X	X		X
Chukar	Alectoris graeca	Algr	4	E	C	GB	YL	C2		C3,C4		C3,C4		X	X		X

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Hungarian Partridge	Perdix perdix	Pepe	4	E	U	GB	YL	C2						X	X		X
Sandhill Crane	Grus canadensis	Grca	2	I	R		M-S			C2				X		X Mice, Fish	Grain
Virginia Rail	Rallus limicola	Rali	2	I	R		M-S			C2				X		Amph. reptile Aquatic Animals	
Sora Rail	Porzana carolina	Poca	2	I	R		M-S			C2				X		Aquatic Animals	
American Coot	Fulica americana	Fuam	2	A	C		M-S			C2				X			X
Killdeer	Charadrius vociferus	Civo	4	E	C		M-S	C2					Shoreline Swamps	X			
Common Snipe	Capella gallinago	Caga	4	I	C		M-S	C2					"	X			
Long-billed Curlew	Numenius americanus	Nuam	4	I	R	S	M-S	C2					"	X			
Solitary Sandpiper	Tringa solitaria	Trso	2	A	R		M-S	C2					"	X			
Greater Yellowlegs	Totanus melanoleucus	Tome	2	A	R		M-S	C2					"	Aquatic X			
Lesser Yellowlegs	Totanus flavipes	Tofl	2	A	R		M-S	C2					"	Aquatic X			
Pectoral Sandpiper	Erolia melanotus	Erme	2	I	R		M						"	X			
Baird's Sandpiper	Erolia bairdii	Erba	2	I	R		M						"	X			
Least Sandpiper	Erolia minutilla	Ermi	2	I	R		M-S						"	X			
Long-billed Dowitcher	Limnodromus scolopaceus	Lisc	2	I	R		M						"	X			
Semipalmated Sandpiper	Ereunetes pusillus	Erpu	2	I	R		M						"	X			
Spotted Sandpiper	Actitis macularia	Acma	4	E	C		M-S	C2		C2			"	X			
Western Sandpiper	Ereunetes mauri	Erma	2	I	R		M						Shoreline	X			

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Marbled Godwit	Limosa fedoa	Life	2	I	R		M						"	X		Molluscs & grasshoppers	
American Avocet	Recurvirostra americana	Ream	2	I	U		M-S			C2			"	X	Aquatic X		
Wilson's Phalarope	Steganopus tricolor	Sttr	2	A	C		M-S			C2			"	Aquatic Insects & crustaceans			
Northern Phalarope	Lobipes lobatus	Lulo	2	A	U		M			C2			"	Aquatic Insects & crustaceans			
California Gull	Larus californicus	Laca	2	I	R		M-S	C2					"	Aquatic		Earthworms	
Ring-billed Gull	Larus delewarensis	Lade	2	I	R		M-S	C2					"			Aquatic	
Franklin's Gull	Larus pipixcan	Lapi	2	G	R		M-S			C2			"	X		Earthworms	
Forster's Tern	Sterna forsteri	Stfo	2	A	R		M-S			C2			"	X		Minnows	
Black Tern	Chlidonias niger	Chni	2	A	R		M			C2			"	X		Crustaceans	
Rock Dove	Columba livia	Coli	3	E	U	GB	M-S		C2						Grain, Fruit, Shoots		
Mourning Dove	Zenaidura macroura	Zema	4	E	C	GB	M-S	C2			C1,C2,C	C1			X		Grain & Fruit
Screech Owl	Otus asio	Otas	10	E	R		YL				C1,C2,C			X		Birds & Mice	
Great Horned Owl	Bubo virginianus	Buvi	8	E	R		YL		C2		C1,C2,C					Rabbits, birds, rodents	
Pygmy Owl	Glaucidium gnoma	Glgn	10	D	R		YL				C2			X		Mice & Birds	
Great Gray Owl	Strix nebulosa	Stne	8	E	R		YL				C2			X		Rodents, lizards, birds	
Long-eared Owl	Asio otus	Asot	8	E	R		M-S				C2	C1				Mice	
Short-eared Owl	Asio flammeus	Asfl	4	E	R		M-S	C2						X		Mice	
Saw-whet Owl	Aegolius acadicus	Aeac	10	E	U		YL				C1,C2					Birds, Mice, Squirrel	
Common Night Hawk	Chordeiles minor	Chmi	4	F	C		S	C2			C1		C1,C2 buildings	X			

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA	LIFE FORM		RELATIVE	CLASSI-	SEASON	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME	CODE	REPRO-DUCES	FEEDS	ABUNDANCE	FICATION	OF OCCURRENCE	GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
White-threated Swift	Aeronautes saxatalis	Aesa	3	F	R		S		C2					X			
Black-chinned Hummingbird	Archilochus alexandri	Aral	8	F	U		S				C2			X	Flower Nectar		
Broad Tailed Hummingbird	Selasphorus platycercus	Sepl	8	F	U		S					C2		X		Nectar	
Rufus Hummingbird	Selasphorus rufus	Seru	8	F	U		S					C2		X		Nectar	
Calliope Hummingbird	Stellula calliope	Stea	7	F	U		S				C2			X		Nectar	
Belted Kingfisher	Megaceryle alcyon	Meal	11	A	U		YL		C2		C1					Fish	
Red Shafted Flicker	Colaptes cafer	Coca	9	F	C		YL				C2 snags C1 cavity			X	X		
Pileated Woodpecker	Dryocopus pileatus	Drpi	9	F	R		YL				C1,C2 cavity			X	X		X
Lewis' Woodpecker	Asyndesmus lewis	Asle	8	F	C		S				"			X	X		
Yellow-bellied Sapsucker	Sphyrapicus varius	Spva	8	F	U		S				"			X	X		
Williamson's Sapsucker	Sphyrapicus thyroideus	Spth	8	F	R		S				"			X			X
Hairy Woodpecker	Dendrocopos villosus	Devl	8	B	U		YL				"			X	X		
Downy Woodpecker	Dendrocopos pubescens	Depu	8	F	U		YL				deciduous C2 cavity			X	X		
Northern Three-toed Woodpecker	Picoides tridactylus	Pitr	8	F	R		YL				C1 conifer C2 cavity			X			
Eastern Kingbird	Tyrannus tyrannus	Tyty	8	F	U		S				C1,C2,C3		Buildings Poles	X	X		
Western Kingbird	Tyrannus verticalis	Tyve			U		S				C1,C2,C3		"	X	X		
Say's Phoede	Sayornis saya	Sasa	3	F	R				C2 Ledge			C3	Bridge Buildings	X			

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Traill's Flycatcher	Empidonax traillii	Emtr	5	F	U		S					C2		X			
Hammond's Flycatcher	Empidonax hammondii	Emha	6	F	U		S				C1,C2,C3 C4 small	C2,C3,C4		X			
Dusky Flycatch	Empidonax oberholseri	Emob	5	F	U		S					C2,C3,C4		X			
Gray Flycatcher	Empidonax wrightii	Emwr	5	F	R		S				C1,C2,C3 C4	C2,C3,C4		X			
Western Flycatcher	Empidonax difficilis	Emdi	8	F	U		S				C1,C2,C3 C4 roots		Building	X			
Western Wood Peewee	Contopus sordidulus	Coso	8	F	U		S				C1,C2,C3 C4 forks			X			
Horned Lark	Eremophila alpestris	Eral	4	D	C		YL	C2						X	X		
Violet-green Swallow	Tachycineta thalassina	Tath	10	F	C		S				C2 cavity boxes			X			
Tree Sallow	Iredoprocne bicolor	Irbi	10	F	C		S				C2 cavity boxes			X			X
Bank Swallow	Riparia riparia	Riri	11	F	U		S		C2 banks					X			
Barn Swallow	Hirundo rustica	Hiru	3	F	C		S		C2				Bridges/ Building	X			
Cliff Swallow	Petrochelidon pyrrhonota	Pepy	3	F	A		S		C2				Building	X			
Rough-winged Swallow	Stelgidopteryx ruficollis	Stru	11	F	C		S		C2 Hole					X			
Gray Jay	Perisoreus canadensis	Peca	7	B	U		YL				C1,C2,C3 C4 conifer			X	X	X	X
Steller's Jay	Cyanocitta stelleri	Cyst	7	B	U		YL				"			X	X	X	
Black-billed Magpie	Pica pica	Pipi	8	B	A		YL				C1,C2,C3 C4	C1,C2,C3 C4		X	X	Other birds eggs and young	
Common Raven	Corvus corax	Coco	8	B	C		YL		C2		C2			X	X	Carrion	
Common Crow	Corvus brachyrhnchos	Cobr	8	B	C		YL				C2			X	X	X	X

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA	LIFE FORM		RELATIVE	CLASSI-	SEASON	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME	CODE	REPRO-DUCES	FEEDS	ABUNDANCE	FICATION	OF OCCURRENCE	GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Clark's Nutcracker	Nucifraga columbiana	Nuco	7	B	C		YL				C1,C2,C3 C4 conifer			X	X	X	X
Black-capped Chickadee	Parus atricapillus	Paat	10	F	C		YL				C1,C2,C3 C4 hole/crevice			X	X		
Mountain Chickadee	Parus gambeli	Paga	10	F	A		YL				C1,C2,C3 C4 hole, crevice, snags			X			
White-breasted Nuthatch	Sitta carolinensis	Sicar	10	F	R		YL				C1,C2,C3 C4 woodpecker holes			X			
Red-breasted Nuthatch	Sitta canadensis	Sican	10	F	C		YL				C1,C2,C3 holes			X	X		
Pygmy Nuthatch	Sitta pygmaea	Sipy	10	F	U		YL				"			X	X		
Brown Creeper	Certhia familiaris	Cefa	8	F	U		YL				C2 under loose bark	C1,C3		X			
Dipper	Cinclus mexicanus	Cime	2	A	U		YL		C2				C2 logs	Aquatic Insects		Fish eggs & fry	
House Wren	Troglodytes aedon	Trae	8	H	U		S				C2 holes	C1,C3	Building	X			
Winter Wren	Troglodytes troglodytes	Trtr			R		S				C2 holes stump	C2		X			
Long-billed Marsh Wren	Telmatodyte palustris	Tepa	2	F	U		S			C1,C2,C3				X			
Canon Wren	Catherpes mexicanus	Came	3	F	U		YL	C2 rock areas	C2 ledges					X			
Rock Wren	Salpinctes obsoletus	Saob	3	F	U		S		C2 boulder areas					X			
Gray Catbird	Dumetella carolinensis	Duca	5	H	R		S					C1,C2,C3 C4		X	X	X	Fruits
Sage Thrasher	Oreoscoptes montanus	Drmo	5	F	R		S					C1,C2,C3 C4 sagebrush		X	X		Fruits

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Robin	Turdus migratorius	Tumi	B	H	A		YL				C2,C2,C4		C2 Buildings	X	X	Earthworms	Fruit
Varied Thrush	Ixoreus naevius	Ixna	B	B	R		S				C1,C2,C4			X	X		Fruit
Hermit Thrush	Hylocichla guttata	Hygu	B	F	U		S				C1,C2,C4			X	X		
Swainson's Thrush	Hylocichla ustulata	Hyus	S	F	U		S				C4	C1,C2,C3 C4		X	X		
Veery	Hylocichla fuscescens	Hyfu	S	F	U		S					C1,C2,C3 C4		X	X		
Mountain Bluebird	Sialia currucoides	Sicu	10	F	C		S				C2 snags holes			X	X		
Townsend's Solitaire	Myadestes townsendi	Myto	4	F	R		YL		C2		C1,C2,C4 C4 roots			X	X		
Golden-crowned Kinglet	Regulus satrapa	Resa	B	F	U		YL				C1,C2,C4 C4 conifer branches			X			
Ruby-crowned Kinglet	Regulus calendula	Reca	7	F	U		Sp-S				"			X			
Water Pipet	Anthus spinoletta	Ansp	4	F	R		S	C2						X	X		
Bohemian Waxwing	Bombycilla garrula	Boga	B	F	C		W				C1,C2,C4						Fruit
Cedar Waxing	Bombycilla cedrorum	Boca	B	F	C		S				C1,C2,C4	C2		X	X		Fruit
Northern Shrike	Lanius excubitor	Laex	B	D	R		W							X		Birds & Mice	
Loggerhead Shrike	Lanius ludovicianus	Lalv	B	D	R		Sp-S				C2	C2		X		Birds & Mice	
Starling	Sturnus vulgaris	Stvu	B	H	A		YL				C2 holes		C2 Box/ Buildings	X	X		Fruit
Solitary Vireo	Vireo solitarius	Viso	B	F	R		S				C1,C2,C3 C4 conifer	C1,C2,C3 C4 riparian		X			

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA	LIFE FORM		RELATIVE	CLASSI-	SEASON	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME	CODE	REPRO-DUCES	FEEDS	ABUNDANCE	FICATION	OF OCCURRENCE	GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Red-eyed Vireo	Vireo olivaceus	Viol	6	F	U		S				C1,C2,C3 C4 Deci-duous	C1,C2,C3 C4 Ri-parian		X			
Warbling Vireo	Vireo gilvus	Vigi	8	F	U		M-S				C1,C2,C3 C4 Tops			X			
Orange Crowned Warbler	Vermivora celata	Vece	4	F	R		M-S	C2				C1,C2,C3 C4 Sage/ Aspen		X			
Yellow Warbler	Dendroica virginae	Devi	8	F	C		M-S				C1,C2,C3 C4			X			
Yellow Rumped Warbler	Dendroica auduboni	Deau	7	F	C		S				C1,C2,C3 C4 Con-ifers			X			Fruit
Townsends Warbler	Dendroica townsendi	Deto	5	F	R		M					C1,C2,C3 C4		X			
MacGillivray's Warbler	Oporornis tolmiei	Opto	5	F	C		S					C1,C2,C3 C4		X			
Yellowthroat	Geothlypis trichas	Getr	2	F	R		S	June Vegetation C2 near water						X			
Yellow Breasted Chat	Icteria virens	Icvi	5	F	R		M-S					C1,C2		X			
Wilson's Wabler	Wilsonia pasilla	Wipa	5	F	U		M-S	C2				C1,C2		X			
American Redstart	Setophaga ruticilla	Seru	5	F	U		M-S				C1,C2	C1,C2		X			
House Sparrow	Passer domesticus	Pado	10	D	A		YL		Buildings					X	X Grain		
Bobolink	Dolichonyx oryzivorous	Door	4	D	R		S							X			Weeds
Western Meadowlark	Sturnella neglecta	Stne	4	D	C		M-S	C2						X	X		
Yellow-headed Blackbird	Xanthocephalus xanthocephalus	Xaxa	2	E	C		M-S			C1,C2				X	X		Grain
Red Winged Backbird	Agelaius phoeniceus	Agph	2	E	A		M-S			C1,C2				X	X		Grain
Northern Oriole	Icterus bullockii	Icbu	6	F	R		M-S				C1,C2			X			Fruit

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Brewer's Blackbird	Euphagus cyanocephalus	Eucy	5	D	C		M-S	C2				C1,C2		X	X		
Brown-headed Cowbird	Molothrus ater	Moat	5	E	U		Sp-S		uses nests of other birds					X	X		Grain
Western Tanager	Piranga ludoviciana	Pilu	7	F	U		M-S				C1,C2 conifers			X			Fruits
Balck-headed Grosbeak	Pheucticus melanocephalus	Phme	8	F	R		M-S				C2			X	X		Buds & Fruit
Evening Grosbeak	Hesperiphona vespertina	Heve	7	B	C		YL				C1,C2 Conifer				X		Buds & Fruit
Pine Grosbeak	Pinicola enucleator	Pien	7	B	C		YL				C1,C2 Conifer						Buds & Fruit
Lazuli Bunting	Passerina amoena	Paam	5	F	U		M-S					C1,C2		X	X		Coniferous Leaf buds
Cassin's Finch	Carpodacus cassinii	Caca	7	B	U		YL				C1,C2 Conifer						
House Finch	Carpodacus mexicanas	Came	8	B	U		YL				C2			X	X		
Gray-crowned Rosy Finch	Leucosticte tephrocotis	Lete	3	B	C		YL		C2					X	X		Sedges
Black Rosy Finch	Leucosticte atrata	Leat	3	B	R		YL		C2					X	X		Sedges
Common Red Poll	Acantha flammea	Acfl	3	B	U		M-W								X		
Pine Siskin	Spinus pinus	Sppi	8	B	C		M-S				C1,C2				X		Bud
American Goldfinch	Spinus tristis	Sptr	8	B	U		YL				C2	C1,C2			X		Buds & catkins
Red Crossbill	Loxia curvivostra	Locu	7	B	U		YL				C1,C2,C3 Conifer			X	X		Cone Seeds
Snow Bunting	Plectrophenax nivalis	Plni			U		M-W								X		
Green Tailed Towhee	Chlorura chlorura	Chch	4	B	C		M-S	C2				C1,C2,C3		X	X		
Rufue-sided Towhee	Pipilo erythrophthalmus	Pier	4	B	U		M-S	C2				C1		X	X		
Oregon Junco	Junco oreganus	Juor	4	B	C		YL	C2				C1,C3		X	X		

APPENDIX 4-B (Cont.)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Savanna Sparrow	Passerculus sandwichensis	Pasa	4	B	U		M-S	C2						X	X		
Grasshopper Sparrow	Ammodramus savannarum	Amsa	4	F	R		M-S	C2				C1		X	X		
Vesper Sparrow	Pooecetes gramineus	Pogr	4	F	C		M-S	C2				C1		X	X		
Lark Sparrow	Chondestes grammacus	Chgr	4	E	U		S	C2				C2		X	X		
Sage Sparrow	Amphispiza belli	Ambe	5	E	R		S					C1,C2		X	X		
Chipping Sparrow	Spizella passerina	Sppa	5	F	C		S					C1,C2		X	X		
Brewer's Sparrow	Spizella breweri	Spbr	5	F	C		S					C1,C2		X	X		
White-crowned Sparrow	Zonotrichia leucophrys	Zole	5	F	C		S	C2				C2		X	X		
Fox Sparrow	Passerella iliaca	Pail	2	F	R		S	C2				C1,C2		X	X		
Song Sparrow	Melospiza melodia	Meme	5	F	C		YL	C2				C1,C2		X	X		

APPENDIX 4-C

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/														Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Masked Shrew	Sorex cinereus	Soci	4	E	C	UP			X O		X O		X O	X O				X O	X O	If, C1, C2, C3, C4
Water Shrew	Sorex palustris	Sopa	2	A	U	UP			X O		X O							X O		C1, C2, C3, C4
Vagrant Shrew	Sorex vagrans	Sova	2	E	*	UP												X O		IF, C1, C2, C3, C4
Dusky Shrew	Sorex Obscurus	Soob	4	E	*	UP								X O				X O		IF, C1, C3, C4
Merriam Shrew	Sorex merriami	Some	4	E	*	UP	X O	X O	X O	X O	X O	X O			X O		X O			DF, IF, C1, C2, C3, C4
Little Brown Bat	Myotis lucifugus	Mylu	3/10	F	*	UP								X O				X O	X O	IF
Small-footed Bat	Myotis subulatus	Mysu	3	F	*	UP								X O						IF
Long-eared Myotis	Myotis evotis	Myev	3/10	F	*	UP								X O						IF
California Myotis	Myotis californicus	Myca	3/10	F	*	UP								X O				X O		IF
Long-legged Myotis	Myotis volans	Myvo	3	F	*	UP	Buildings, rock ledges													IF
Big Brown Bat	Eptesicus fuscus	Epfu	3/10	F	*	UP	Mines, buildings							X O						IF
Silvery-haired Bat	Lasionycteris noctivagans	Lano	3/10	F	*	UP	Mines, buildings							X O						IF
Yuma Myotis	Myotis yumanensis	Myyu	3	F	*	UP	Mines, buildings													IF

APPENDIX 4-C (Cont.)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/														Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Hoary Bat	Lasiurus cinereus	Laci	3/10	F	*	UP	Mines							X O						IF
Western Big-eared Bat	Plecotus townsendi	Plto	3	F	*	UP	Mines, buildings													IF
Spotted Bat	Euderma maculata	Euma	3	F	R	UP	Caves, buildings											O		IF
Black-tailed Jackrabbit	Lepus californicus	Leca	4/11	E	A	P	X O	X O	X O	X O	X O	X O	O		X O	X O	X O	O		DF, C1, C2, C3, C4
Richardson Ground Squirrel	Citellus richardsonii	Ciri	11	E	C	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O				DF, IF, C1, C4
Townsend Ground Squirrel	Citellus townsendii	Cito	11	E	U	UP	X O	X O		X O		X O							O	DF, C1, C4
Golden-mantle Ground Squirrel	Citellus lateralis	Cila	11	E	A	g	X O	X O	X O	X O	X O	X O	X O					X O	X O	IF, C4
Least Chipmunk	Eutamia minimus	Eumi	8/11	B	A	g	X O	X O	X O	X O	X O	O	X O							DF, IF, C1, C4
Yellow Pine Chipmunk	Eutamia amoenus	Euam	8/11	B	*	g							X O	X O						DF, IF, C1, C4
Red Squirrel	Tamiasciurus hudsonicus	Tahu	10	B	*	g								X O						DF, IF, C1, C4
Northern Flying Squirrel	Glaucomys sabrinus	Glsa	10	B	*	g								X O						C4
Northern Pocket Gopher	Thomomys talpoides	Thta	11	J	*	UP	X O	X O	X O		X O		X O					O	X O	DF, IF
Beaver	Castor canadensis	Caca	2	I	C	F												O		DF

APPENDIX 4-C (Cont.)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/														Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
White-tailed Jackrabbit	Lepus townsendii	Leto	4/11	E	U	P	X O	X O	X O	X O	X O	X O	O		X O	X O	X O			DF, C1, C2, C3, C4
Snowshoe Rabbit	Lepus americanus	Leam	4/11	E	U	UP	X O	X O	X O		X O		X O	O				X O		DF, C1, C2, C3, C4
Mountain Cottontail	Sylvilagus nuttallii	Synu	4/11	E	A	G	X O	X O	X O		X O	X O	X O		X O		X O	X O		DF, IF, C1, C2, C3, C4
Pigmy Rabbit	Sylvilagus idahoensis	Syid	4/11	E	U	G	X O						X O				X O	O		DF, C1, C2, C3, C4
Pika	Ochotona princeps	Ocpr	4/11	E	U	g	Rockslides													DF, C1, C4
Yellow-bellied Marmot	Marmota flaviventris	Mafl	11	E	A	UP	X O	X O				O	X O				X O	O	O	DF, C1, C4
Hoary Marmot	Marmota caligata	Maca	11	E	U	UP		X O				X O								DF, C1, C4
Columbian Groundsquirrel	Citellus columbianus	Cico	11	E	A	UP			X O		X O		X O				X O	O	X O	DF, C1
Northern Grasshopper Mouse	Onychomys leucogaster	Onle	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O	X O		IF, C1, C4
Deer Mouse	Peromyscus maniculatus	Pema	4	E	A	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O	X O		IF, DF, C4
Bushy-tailed Wood Rat	Neotoma cinerea	Neci	4	E	*	UP	Rim-rock & rock slides													DF, C1, C4
Desert Wood Rat	Neotoma lepida	Nele	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O			DF, C1, C4

APPENDIX 4-C (Cont.)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/														Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows		
Mountain Phenacomys	Phenacomys intermedius	Phin	4	E	*	UP								X O							DF, C1, C2, C3, C4
Boreal Red-backed Vole	Clethrionomys gapperi	Clga	4/8	B	*	UP								X O				X O			DF, C1, C3, C4
Meadow Vole	Microtus pennsylvanicus	Mipe	2	E	A	UP								X O				X O			DF, C1, C2, C3, C4
Longtail Vole	Microtus longicaudus	Milo	2	E	*	UP							X O					X O			DF, C1, C2, C3, C4
Mountain Vole	Microtus montanus	Mimo	4	E	*	UP														X O	DF, C1, C2, C3, C4
Richardson Vole	Microtus richardonsi	Miri	2	E	*	UP												X O			DF, C1, C2, C4
Sagebrush Vole	Lagurus curtatus	Lacu	4	E	*	UP	X O	X O	X O	X O	X O	X O					X O				DF, C1, C3
Great Basin Pocket Mouse	Perognothus parvus	Pepa	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O								DF, IF, C1, C2, C3, C4
Muskrat	Ondatra zibethica	Onzi	2	I	C	F												X O			O
Ord's Kangaroo Rat	Dipodomys ordii	Dior	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O			DF, IF, C1, C3, C4
Western Jumping Mouse	Zappus princeps	Zapr	4	E	*	UP												X O			IF, C1, C2, C3, C4
Porcupine	Erethizon dorsatum	Erdo	8	B	U	UP	X O	X O			X O	X O	X O	X O				X O			C4

APPENDIX 4-C (Cont.)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/													Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
House Mouse	Mus musculus	Mumu	4	E	*	UP	Man-made structures													DF, IF, C1, C2, C3, C4
Black Bear	Ursus americanus	Uram	4	E	U	G							X O	X O						O
Racoon	Procyon lotor	Prlo	2/8	I	U	F												X O		IF
Marten	Martes americana	Maam	7	B	R	F								X O						IF, C1, C4
Shorttail Weasel	Mustela frenata	Mufr	2	E	*	P							X O					X O	O	IF, C1, C4
Mink	Mustela vison	Muvi	2	I	U	F												X O		IF, C1, C4
Spotted Skunk	Spilogale putorius	Sppu	4	E	U	P												X O		IF, C1, C4
Striped Skunk	Mephitis mephitis	Meme	4	E	C	P												X O	O	IF, C1, C4
Badger	Taxidea taxus	Tata	11	J	C	UP	X O	X O		X O		X O	X O		X O	X O		X O	O	IF, C1
Red Fox	Vulpes fulva	Vufu	4	E	U	F												X O	O	IF, C1, C4
Coyote	Canis latrans	Cala	4	E	C	P	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	IF, C1, C4
Mountain Lion	Felis concolor	Feco	4	E	R	G	X O	X O		X O		X O		X O				O	O	IF
Bobcat	Lynx rufus	Lyru	4	E	R	F/S	X O	X O	X O	O	X O	X O	X O					O		IF
Lynx	Lynx canadensis	Lyca	4	E	R	R/S	Rough terrain, canyons													IF
River Otter	Lutra canadensis	Luca	1	A	U	F/S												X O		C1, C4

APPENDIX 4-C (Cont.)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/														Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Elk	Cervus canadensis or elaphus	Ceca	4	E	U	G	X O	X O	X O	X O	X O		X O	X O				O	O	DF, C1, C3, C4, B, W, R
Mule Deer	Odocoileus hemionus	Odhe	4	E	C	G	X O	X O		X O		X O		X O				X O	O	DF, C1, C2, C4, B,W,R
Pronghorn Antelope	Antilocapra americana	Anam	4	E	A	G	X O	X O	X O	O	X O	X O			X O	X O	X O	O	O	DF, C1, C4, B, W, R
Bighorn Sheep	Ovis canadensis	Ovca	3	E	U	G		X O	O	X O	O		O		O	High	Slopes			DF, C1, C4, B, W, R
Moose	Alces alces	Alal	4	E	R	G								X O				X O	O	DF, C1, C4, B, W, R
Mountain Goat	Oreamnos americanus	Oram	3	E	R	G	High cliffs													DF, C3, C4, B, W, R

1/ Bernard, Stephen R. and Kenneth F. Brolon 1977. Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A. W. Kuchler's Associations for the Eleven Western States. Tech. Note 301. US Department of the Interior, Bureau of Land Management.

2/ Refer to Appendix for Life Form descriptions.

3/ A = Abundant - Observed everytime a person visits its habitat at the proper season.
C = Common - Observed most of the time a person visits habitat at the appropriate season.
U = Uncommon - Not observed regularly in its habitat. Habitat may be limited.
R = Rare - Rarely observed. Species occupies a small percentage of its preferred habitat or habitat is extremely limited.
* = Present but current abundance unknown.

4/ G = Game Animal
F = Fur Bearer
P = Predatory Animal
GB = Game Bird
g = Protected Non-game
UP = Unprotected
S = Sensitive Species

5/ X = Reproduction
O = Feeding

6/ DF = Direct Food Competition
IF = Indirect Food Competition
W = Competition for Water
B = Competition Creates Behavorial Impacts
C = Competition for Cover
C1 = Resting Cover
C2 = Nesting Cover
C3 = Thermal Cover
C4 = Escape Cover

APPENDIX 4-D

DIRECTION OF STRUCTURAL DEVELOPMENT
DUE TO PROPOSED MANAGEMENT ACTIONS

Discrete Management Action	Grass/ Forb	Low Shrub	Tall Shrub	Tree	Tree/ Shrub
Livestock Grazing	⟷	⟷	⟷	—	←
Controlled Burning	←	←	←	←	←
Seeding and Planting					
(a) Grasses	⇉ ⇇	←	←	←	←
(b) Grasses/Forbes	⇇ ⇉	←	←	—	—
(c) Shrubs	→	—	—	—	—
(d) Trees	→	→	→	—	—

→ Advances Succession

← Retards Succession

⟷ Advances or Retards Succession on type or level and intensity of application.

— No effect on Succession.

APPENDIX 4-E

DETERMINING DISPLACEMENT AND REPLACEMENT OF WILDLIFE

1. Locate the proposed discrete management action in Appendix 3-D.

2. Locate the structural stage of the vegetation where the discrete action is to occur (refer to Vegetation Map, Chapter 2).

3. Using Appendices 3-A, 3-B and 3-C predict what wildlife species are most likely to occur in the vegetation type/structural stage where the discrete action is to occur.

4. (a) Locate, from Appendix 3-D, which way the present plant community will be altered and what the next structural stage will be.

(b) Mentally note what vegetation and structural stages will be lost in the change.

(c) Now go to the list made in Step 3 and locate those species dependent on plants and structural stages identified in Step 4b. These will be the wildlife species one would predict to be lost or displaced.

5. Locate all wildlife species associated with the new plants and structural stage identified in 4a and note species not found in the sagebrush/grass stage. These will be the wildlife species predicted to replace the ones previously displaced.

6. Determine the trade-off (environmental, economical, social, etc.) of gaining and losing certain species and determine the impacts.

Example: A controlled burn is proposed in a Wyoming big sage/bluebunch wheatgrass area in the East Fork Allotment.

1. Discrete action is a controlled burn (given).

2. Structural stage is low shrub (Map 2-1, Chapter 2, was referred to).

3. Wildlife species present are bighorn sheep, sagebrush lizard, Brewer's sparrow, vesper sparrow, least chipmunk.

4. Present plant community will revert to a grass/forb structural stage and stage and sagebrush will be the main vegetation destroyed (Columns 1 & 2, Appendix 3-D). Those species in Step 3, dependent on or principally associated with sagebrush, are the sagebrush

lizard and Brewer's sparrows. One would predict these species to be displaced or lost.

5. Wildlife species in the new vegetation community and structural stage are the Savannah sparrow, sagebrush lizard, least chipmunk, etc. The Savannah sparrow is the only species that is new and has now replaced the displaced species.

6. Impacts are low since lost and replaced species are common and abundant in the area. The burning has higher benefits to bighorn sheep since it provides additional forage to the sheep. Sheep are a big game species and have high consumptive and nonconsumptive values. Draw your own conclusions on trade-offs.

APPENDIX 4-F

CRITERIA FOR BIG GAME HABITAT CONDITION CLASSIFICATION

Bighorn Sheep, Elk

Good bighorn sheep and elk winter habitat in the Challis Environmental Impact Statement Area is represented by climax perennial grass/shrub associations (bluebunch wheatgrass/sagebrush). Therefore, habitat condition was based on the ecological condition classification system explained in appendix and conducted in 1977. Future habitat condition projections are also based on inventory and ecological potentials from the 1977 survey.

Good ecological condition = good elk and bighorn winter habitat
Fair ecological condition = fair elk and bighorn winter habitat
Poor ecological condition = poor elk and bighorn winter habitat

Deer, Antelope

Habitat condition classification is based on the 176 "Cole" browse transects consisting of 8,800 sample points in the Challis Planning Unit. The transects determined condition class of shrubs by measuring the amount of hedging, age class and plant dimensions of palatable shrub species (palatable to big game). Classification of habitat condition is as follows:

Good - Desirable plant less than 16% severely hedged.
Age Structure: Number of decadent plants minus number of young plants not equalling greater than 35% of the plants measured.

Fair - Desirable plants less than 17-35% severely hedged.
Age Structure: Decadent plants minus seedlings comprising less than 35% of plants measured.

Poor - Severe hedging on 36% or more of the plants sampled.
Age Structure: Decadent plants minus young plants is greater than 35% of the total plants measured.

APPENDIX 5-A

CRITERIA FOR EVALUATING CHALLIS UNIT STREAM CONDITIONS

A. Stream Shade (June-September; 11:00 a.m. - 5:00 p.m.)

Numerical Rating

4 (Excellent)	Shade from 80-100%
3 (Good)	Shade from 60-80%
2 (Fair)	Shade from 40-60%
1 (Poor)	Shade from 0-40%

B. Streambank Condition (Vegetation)

Numerical Rating

4 (Excellent)	No negligible use/damage; vegetation (primarily grasses, sedges and forbs) well-rooted; sod intact; very little, if any erosion from vegetation areas; less than 5% bare soil showing.
3 (Good)	Some use/damage; vegetation generally well-rooted; sod mostly intact; soil showing in places (6% to 15% bare soil showing overall); some surface erosion evident.
2 (Fair)	Use of damage close to sod; vegetation shallow rooted; moderate surface erosion (15% to 25% bare soil showing overall).
1 (Poor)	Heavy to severe use/damage; vegetation generally cropped to sod; considerable soil showing (over 25%) with sod damage serious; active surface erosion a serious problem.

C. Streambank Stability

Numerical Rating

4 (Excellent)	Bank Stable and Undamaged - Partial or no evidence of bank damage; 90-100% of bank free from use/damage. Little or no unnatural bank erosion or sloughing present.
3 (Good)	Bank Damage 20% or Less - Banks 80-90% free from use/damage. Some erosion and sloughing but fully recoverable after a season of rest.
2 (Fair)	Bank Damage 40 Percent or Less - Banks having received 20-40% damage from use/damage. Moderate to heavy bank erosion and sloughing during season(s) of use, and which continues

	during no use period(s). Conditions will not allow natural stability recovery of banks to a greater than 60% stability.
1 (Poor)	Bank Damage Excessive - Banks exhibiting greater than 40% damage. Severe bank damage and accelerated erosion and sloughing is present over virtually the entire bank surveyed evidence of bank recovery visible, and erosion consistent.

D. Stream Channel Stability

Numerical Rating

4 (Excellent)	No or negligible lateral channel movement and bank erosion (cutting) (5%), scour, or changing channels.
3 (Good)	Some lateral channel movement and bank erosion (5-10%), minor channel scour or changing channels within streambed.
2 (Fair)	Frequent lateral channel movement (10-15%); moderate channel scour or channel change within streambed.
1 (Poor)	More than 20% lateral channel movement and bank cutting, changing channels and severe scour evident, and source of extreme sedimentation.

E. Siltation of Streambed (Percent of "fine" sediments covering streambed)

Numerical Rating

3 (Excellent)	Less than 10%
2 (Fair-Good)	10-25%
1 (Poor)	More than 25%

Total numerical scores determine overall stream condition rating:

Total Numerical Score	Overall Stream Condition
17+	Excellent
14-16	Good
10-13	Fair
5-9	Poor

Sources:

Armour, C.L. 1977
Behnke, R.J. & M. Zarn 1976
Cordone, A.J. & D.W. Kelley 1961
Corley, D.R. 1976
Corning, R.V. 1969
Gibbons, D.R. & E.O. Salo 1973
Giger, R.D. 1973
U.S. Dept. of Agriculture, Forest Service 1977

APPENDIX 5-B

FISH SPECIES IN CHALLIS PLANNING UNIT

Anadromous Fish

Species	Scientific Name	Habitat in Unit
Chinook Salmon	Oncorhynchus tshawytscha	Rivers, streams
Sockege Salmon	Oncorhynchus nerka	"
Steelhead Trout	Salmo gairdneri	"
Lamprey	Entosphenous tridentatus	"

Resident Fish

Mountain Whitefish	Prosopium williamsoni	"
Cutthroat Trout	Salmo clarki	Rivers, streams, lakes
Rainbow Trout	Salmo gairdneri	"
Brook Trout	Salvelinus fontinalis	Streams
Dolly Varden Trout	Salvelinus Malma	Rivers, streams, lakes
Squawfish	Ptychocheilus oregonensis	Rivers
Redside Shiner	Richardsonius balteata	"
Mountain Sucker	Catostomous platyrhychus	"
Sculpin	Cottus sp.	Rivers, streams

APPENDIX 6-A

THE DYRAM MODEL

DYRAM, the model used in determining secondary impacts uses industry earnings in combination with a 20-sector industry expected transaction matrix, compiled from the national input-output table, in order to estimate net exports or imports by industry for the economy of a given area. Multipliers for each industy are computed; they refer to impacts on personal income, not business income. The reader is directed to The Annals of Regional Science, November 1975, pp. 44-50, for a detailed mathematical explanation of the model.

ECONOMIC DATA AND METHODOLGY

During July 1978, nine ranchers in the Challis Planning Unit, a 24 percent sample, were interviewed by Abt Associates under contract to obtain characteristics on ranch operations. The sample was stratified so that information could be obtained from large, intermediate, and small operators.

The ranch budget data appears in the socio-economic section of Chapter 2. The following survey form was used by Abt Associates to obtain the data.

Projecting future ranch income is difficult. Assumptions must be made for many variables. The number of AUM's was correlated with ranch income with the following results:

Number of AUM's	Income
10,436	$ 70,000
17,444	$192,263
12,456	$120,000
9,202	$ 68,000
10,100	$ 70,000
7,128	$ 15,000

$R = .991 \qquad R^2 = .981$

A simple linear regression model was developed to project ranch income. Ninety-eight percent of the variation in income was explained by the AUM data.

$$\text{Income} = -96604.23907 + 16.66455134 \text{ (AUM's)}$$

The reader should keep in mind that these projections are estimates only and do not reflect possible changes in the costs of future production or gross returns.

Name _____

Address _____

Name of Ranch _____

Location _____

Type of Ranch: _____Cow/calf, _____Cow/yearling, _____Cow/calf/yearling

_____Other (explain)

_____

I. Inventory

A. Land:

Type	Owned				Total Operated		
	Acres	Value per Acre	Acres Leased From Others	Acres Leased To Others	Acres	Value per Acre	Total Value
Rangeland							
Cropland, Total							
Irrigated, farmed							
Dryland, farmed							
Idle							
Pasture							
Other							
Total							

B Cattle

	Number on hand Jan. 1, 1977	Transactions During 1977			Number on hand Jan. 1, 1978
		Number Sold	Number Purchased	Died	
Cows 2 and over					
Heifers coming 2					
Heifers coming 1					
Steers coming 2					
Steers coming 1					
Bulls					
Calves born, 1977					
Horses					
Other					

C. Buildings, Equipment Jan. 1, 1973

	Description	Number	Age	Estimated Value (each)	
				Replacement	Salvage
Dwelling					
Bunkhouse					
Shop					
Machine shed(s)					
Barn					
Stock sheds					
Corrals					
Granary(s)					
Well(s)					
Water Troughs, tanks					
Feed bunks					
Improved springs, reservoir, etc.					
Boundary fences		miles			
Owned land					
Cross Fences		miles			
Owned land					
Trucks & pickups					
Tractors					
Wagons & trailers					
Squeeze chutes					
Misc. cattle equip.					
Saddles & harnesses					
Farm Implements					
Mower					
Rake					
Baler					
Bale loader					
Bale stacker					
Windrover					
Combine					
Harrows					
Disk					
Ditcher					
Drill					
Manure Spreader					
Other					

D. Crops on Hand Jan. 1, 1978

Crop	Amount	Value per unit	Amount held over from previous years
Hay			
Grain			
Other			

II.. Income:

A. Livestock sold during 1977

Items	Number or units	Average Weight	Price per unit
Cull			
Bulls			
Yearling heifers			
Yearling steers			
Heifer calves			
Bull calves			
Other			

B. Crops Produced During 1977

Items	Acres	Average Yield	Price per unit	Amount sold	Total value
Hay					
Grain					
Aftermath grazing					
Other					

C. Other (Please explain and estimate the total value of these income sources)_____

_____

_____

_____

D. Did you or any members of your family work off the farm or have any other types of income (non-ranch) during any portion of the year? ___yes ___no. If yes, please estimate the total value of these earnings._____

_____

_____

_____

[II. Cash Expenses, 1977

Item	Annual Cost	Item	Annual Cost
Land Rent		Repairs	
Supplemental feed		Buildings & property	
		Machinery	
Veterinary fees			
Veterinary supplies		Utilities	
Livestock purchased		Water	
Bulls ____ number		Electricity	
		Phone	
		Other	
		Grazing fees	
Insurance		BLM	
Marketing expenses		Forest Service	
Transportation		State	
Hired labor		Other	
Contract labor			
Taxes			
Income			
Property		Miscellaneous	
		Accounting	
Seed		Licenses	
Fertilizer		Grazing Association	
Machine Operating costs		Other	
Fuel			
Oil			
Lubricants			

IV. General Information

A. Would you classify 1977 as a better than average, average, or worse than average business year?_____

B. Livestock Practices

1) What percent of your cows do you expect to calve_____% raise a calf to weaning_____%

2) What is your customary breeding season?_____
_____

3) What is your normal bull to cows ratio?_____

4) How long do you normally keep your cows? _____yrs, bulls _____yrs.

5) What is the major cause of death losses on your ranch?

C. Labor

1) Do you (include immediate family) perform all the work on your ranch? ___yes, ___no. If no, please explain.
_____
_____
_____

2) During an average week, how many hours of ranch related labor do you (and your family) work?_____

D. Grazing Permits and Licenses

1) U.S. Forest Service: ___A.U. Date on ___ Date off___ ___AUM's.

2) BLM: ___A.U. Date on ___ Date off ___ AUM's___

3) State lease lands: ___A.U. ___ Date on ___ Date off ___ AUM's.

4) Other: ___ A.U. ___ Date on ___ Date off ___AUM's.

E. Please describe the normal pattern you use for feeding your cattle during the year (e.g. confined feeding, aftermath, public lands).

Number and Type of Animal	Area	Period

F. If your public grazing allotments were reduced, what would be the most likely affect upon this pattern?_____

Upon your overall operation?_____

G. How long have you (or your family) owned this ranch?_____

H. Value of ranch:

Estimate the current market value of your ranch, including land, machinery equipment, buildings and improvements. Do not include the value of the cattle_____(your estimate).

I. What problems would be encountered by another member of your family if he or she desired to enter the ranching industry today?_____

J. Generally speaking, what are your views regarding ranching in the future in the Challis area?_____

K. If any supplemental feeds were listed in the expense section above, where were these feeds purchased?_____

List other areas of potential feed supply._____

L. Did any people, other than family members, use your lands for recreational purposes during the past year? ___yes ___no. If yes, please explain:_____

M. Have you had any problems with recreationists in the past (private and/or public lands)? ___yes ___no. If yes, please explain:

N. Do you feel poaching of game animals and/or fish is a problem in your area? ___yes ___no. If yes, please explain:

O. Please estimate the number and type of game animals, if any, that used your lands during the past year.

Type of Animal	Number	Period of Use

To assess impacts, two rancher strategies were considered; purchasing and reducing herd size. Since there is very little private land in the Challis area, ranchers are not able to graze their herds on private land. It was assumed that one ton of hay equals 2.5 AUMs and that hay cost $50 per ton in 1977.

Purchase of hay result in higher feed costs, higher expenses, and reduced net income; the budgets were adjusted in Chapter 3 and 8 to reflect their added costs. Reduction in herd size reduces income and all variable costs. The budgets reflecting herd size reductions are computed after the rancher has sold his cattle and represent his revised operating budget. All revised items are shown in the budgets by asteriks(*).

It is assumed that a reduction in herd size will correspond to reductions in AUMs; a thirty percent reduction in AUMs, for example, will result in a thirty percent herd reduction.

It should be noted that there is no such thing as an "average rancher". There may be an infinite number of ranch management strategies livestock operators use. No one can predict with certainty how individual operators will adapt to the proposed action or the alternatives.

The impacts were computed from the ranch operators eight year average grazing level to assess real impacts. It was felt that an impact assessment based on active qualifications would only show "paper impacts".

APPENDIX 6-B

METHODOLOGY FOR SOCIAL ASSESSMENT

Two BLM social scientists conducted a total of twelve interviews with residents of the Challis area during the week of June 12-16, 1978. In all, 13 persons were interviewed, one conversation having included two respondents. For purposes of tabulating respondent comments, the remarks of the two respondents interviewed together have been counted as one.

Nine interviews were done on the telephone from Washington, D.C., while three were face-to-face in Challis. A purposive, rather than a random sample was used for this study. The approach taken was dictated primarily by time constraints and Office of Management and Budget (OMB) restrictions on the use of structured (i.e., questionnaire-based) surveys. Caution is urged in viewing results of this study as fully representative of the views of all residents of the Challis Planning Unit. Respondents were selected because of their active roles in the affairs of the area. Two were Custer County Commissioners, three were state legislators (none of whom resided in Custer County but who presently or previously represented the area), three were leaders of cattlemen's associations, three were leaders in a group appointed by the County Commission, the Resource and Economic Stabilization Committee, one represented the town of Challis, and one was a local news representative. Half the respondents run a significant number of livestock (over 100 head), and three are current users of public land for grazing.

The sociological data presented in the Supplement were derived from guided conversations rather than formalized or structured interviews. The interviewers had in mind several topics to cover, but the content of the discussions varied and not every topic was covered in each interview. Field notes were taken during the conversations and later content-analyzed. The following tables display selected comments and the number of interviews in which the gist of each was repeated. Comments were listed if they seemed significant to the interviewer, recurred in several of the interviews, or were especially emphasized by the respondent(s). A comment is counted only once per interview; but a number of different comments from each interview, including some which may not seem to go together, were listed. (An example is: several respondents said they would prefer to keep a lot of outsiders from moving into the area, but also said they would be hospitable to newcomers who fit into the community.)

The interviews contained a heavy emotional element that may not fully emerge in the analysis. Respondents had just

learned of BLM's plans to make significant reductions in allowable grazing on public lands, and many of them were feeling very angry. The emphasis and focus of respondents' remarks was probably influenced strongly by the timing of the interviews. Permittees to be affected by the proposed action had probably not had time to thoroughly think through their options for reactions to reductions, hence predictions of their actions did not appear altogether firm or fully coherent. Interviews conducted either earlier or later would probably have differed significantly in content and tone from those used in this analysis.

All the respondents were glad to participate in the study and expressed gratification that BLM was actively seeking their views on an individual basis. Several of them complained the interviews had not been done earlier, prior to the Challis ES and/or prior to the Bureau's delineation of the current proposed action.

Despite the many limitations of the data and analysis, the strong agreement between respondents suggests the information may be representative of the actual attitudes and values of many residents of the Challis Planning Unit.

TABLE A

STATEMENTS ON RELATIONS WITH GOVERNMENT

Essential Content of Statements	Number Making Statement *
Over 96% of the County is owned by government; therefore, it has a small tax base, dependent on government actions.	9
Various government restrictions create difficulties for Custer County residents (EPA, OSHA, Corps of Engineers, FS, BLM, Idaho Fish and Game, etc.).	5
Because of government domination, residents feel helpless to control the destiny of the area.	5
Government provides public participation mechanisms only to comply with regulations. Our views aren't taken into account by decisionmakers.	6
Government hasn't dealt with us honestly; you can't trust the word of officials.	4
Local, knowledgeable officials don't have the authority to make decisions, which are made elsewhere (Denver or Washington, DC) for political reasons.	4

TABLE B

STATEMENTS ON ECONOMIC CONDITIONS IN CUSTER COUNTY

Over 96% of the County is owned by government; therefore, it has a small tax base, dependent on government actions.	9
The county economy depends on BLM grazing.	2
Wilderness study area designations thwart development, hurt the tax base by removing land from tax rolls.	3
Wilderness and National Recreation Areas don't bring tourist money in. Visitors don't buy things here.	2
Scenic easements hurt the tax base by precluding improvements and increased assessed valuation on land.	4
Subdivision would help county tax base.	4
Young people are leaving the area due to lack of economic opportunity.	5
Ranching is almost impossible for young people to break into unless they inherit or marry into property.	7

TABLE C

STATEMENTS ON GROWTH AND DEVELOPMENT

Essential Content of Statements	Number Making Statement *
Land owners would sell to subdividers very reluctantly, only to survive financially.	8
One rancher in East Fork sold out to a developer and moved away.	5
Land owners would prefer to get money for scenic easements from government as survival mechanism rather than subdivide.	4
Subdivision would help county tax base.	5
Subdivision and recreational development are forcing longtime residents off their land.	2
Subdivision hurts wildlife: More people, their dogs, their vehicles ruin habitat.	4
Subdivision wouldn't affect wildlife. Animals adjust to development if not harrassed.	1
Local people like country living, don't like crowded conditions, or urban life.	8
Local people don't want a lot of outsiders moving into area.	6
Local people would accept compatible outsiders who fit into and contribute to community life.	6

TABLE D

STATEMENTS ON PROBABLE RESPONSES TO CUTS IN BLM GRAZING PRIVILEGES

Most ranchers will hang on; they're tough, they've survived things this bad or worse.	2
Those who are cut will have to reduce their herd size.	3
Those who are out of debt have a better chance to survive.	3
Larger ranchers (over 250 head) have a better chance of surviving cuts.	1
People will subdivide (sell out completely or sell bits and pieces of land) to survive.	8

STATEMENTS ON PROBABLE RESPONSES TO CUTS IN BLM GRAZING PRIVILEGES (continued)

Essential Content of Statements	Number Making Statement *
People would prefer a scenic easement to subdivision as a means of surviving cuts.	4
The economy of the county and town of Challis depends on BLM grazing.	5
Ranches will be bought by outsiders and consolidated.	1
Consolidation is not a trend here.	4
Tax delinquency increased last year due to low cattle prices. BLM cuts would further increase tax delinquency.	2

T A B L E E

STATEMENTS ON WILDILFE

The trend toward subdivision (which would be accelerated by BLM grazing cuts) would harm wildlife BLM is interested in protecting.	5
Development doesn't necessarily harm wildlife. They adjust unless harrassed.	1
There are too many wild horses, increasing at rapid rate, encroaching on ranges of other wildlife.	8
Those promoting protection of wild horses come from far away and don't understand the situation.	2
The government's preference for wild horses over livestock is wrong (i.e., in allocating AUMs).	7
Local people have been protecting wildlife.	3

TABLE F

STATEMENTS ON WILDERNESS AND RECREATION AREAS

Essential Content of Statements	Number Making Statement *
Scenic easements hurt the county tax base by precluding improvements on land.	4
Scenic easements are being sought by ranchers to get money to survive BLM cuts. Preferred to subdivision.	4
Wilderness and National Recreation areas are accessible only to the well-off, not to old, or people without transportation.	2
Wilderness and NRA don't bring in tourist money. Visitors don't buy in area.	2
Wilderness and NRA hurt county tax base by taking still more private land off tax rolls.	3
The government has decided to make this area a playground at the expense of local residents.	3

TABLE G

STATEMENTS ON MOTIVATION FOR RANCHING

Independence, being one's own boss is important.	4
It's the only life we know, many are apprehensive about starting anew.	5
It's a good way of life.	3
It's a tradition of several generations.	4
We like the work, working with livestock.	1
We just love the land and the country.	1
It's a great way to raise kids.	1
Like to be outdoors.	1

Three respondents were asked: Would you go into ranching if you had it to do over? Yes 2; No 1

T A B L E H

STATEMENTS ON THE MOST IMPORTANT QUALITY LOOKED FOR IN OTHERS

Essential Content of Statements	Number Making Statement *
Honesty and integrity.	6
Ability to communicate.	2
Ability to carry out promises.	1
Neat appearance.	1

* Numbers and categories are not mutually exclusive. One person may have made more than one of the statements listed.

APPENDIX 7-A

DISCHARGE RATES (CFS) DURING LOW-FLOW AND CREST-STAGE

Station Number	Station Name	Location	Date	Annual Maximum (CFS)	Annual Minimum (CFS)
13296500	Salmon River Below Yankee Fork, Near Clayton	Lat.44°16'06", long 114°43'55", in sec. 20,T11N.,R15E.,(unsurveyed), Custer County, 700 ft. (213 m) downstream from Yankee Fork, 18 mi (29 km) upstream from Clayton, at at mile 366.9 (590 km).	3/24/69		327
			5/27/69	5,820	
			3/18/70		327
			6/08/70	6,340	
			3/18/71		429
			6/26/71	7,470	
			6/08/72	8,740	
13298500	Salmon River Near Challis	Lat.44°22'43", long 114°15'18", in SE¼SE¼ sec. 7, T12N.,R19E.,Custer County, 250 ft. (76 m) downstream from Bayhorse Creek, 9 mi (14 km) south of Challis, and at mile 334.8 (539 km).	2/09/69		510
			5/27/69	8,340	
			1/07/70		412
			6/08/70	9,280	
			1/04/71		414
			6/27/71	12,100	
			12/02/71		536
			6/10/72	14,000	

APPENDIX 7-B

INFLUENCE OF FLOW ON DISSOLVED SOLIDS AND SUSPENDED SEDIMENT

13296500 SALMON RIVER BELOW YANKEE FORK, NEAR CLAYTON, IDAHO

LOCATION--Lat.44°16'06", long 114°43'55", in sec. 20, T11N.,R15E., (unsurveyed), Custer County, Challis National Forest, on left bank 700 ft. downstream from Yankee Fork, 18 miles upstream from Clayton, and at mile 366.9..

Date	Flow (CFS)	Dissolved Solids (MG/L)	Suspended Sediment (MG/L)
May, 1971	2,920	58	17
June, 1971	6,440	45	32
July, 1971	2,410	48	7
September, 1971	706	73	3
October, 1971	716	89	1
June, 1972	5,820	31	41
July, 1972	1,340	57	3
October, 1972	668	78	
April, 1973	828	67	
June, 1973	1,740	48	
October, 1973	500	81	
June, 1974	4,650	46	

13298500 SALMON RIVER NEAR CHALLIS, IDAHO

LOCATION--Lat.44°22'43", long 114°15'18", in SW¼SE¼SE¼ sec. 7, T12N.,R19E., Custer County, on left bank 250 ft. downstream from Bayhorse Creek and 9 miles south of Challis.

May, 1971	4,680	65	56
June, 1971	10,100	64	172
July, 1971	3,700	64	7
September, 1971	1,160	99	2
October, 1971	1,100	93	
June, 1972	8,760	57	
July, 1972	2,020	78	
October, 1972	1,090	104	7
April, 1973	1,100	85	10
June, 1973	3,170	62	22
October, 1973	600	108	
June, 1974	14,000	52	32,300

APPENDIX 8

LETTERS OF COMMENT
RECEIVED IN
CHRONOLOGICAL ORDER

IDAHO CATTLE FEEDERS ASSOCIATION, INC.

NATIONAL CATTLEMEN'S ASSOCIATION

2120 AIRPORT WAY
P. O. BOX 5755 — BOISE, IDAHO 83705
AREA CODE 208/343-1615

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VICE PRESIDENT
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Sugar City
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Roberts
AT LARGE
TOM OLSEN
Boise
EX-OFFICIO
FRANK HIGHT
Nyssa, OR
ALLIED INDUSTRIES
GARY ROHWER
Parma
SECTY-MANAGER
TOM HOVENDEN
Boise

September 7, 1979

STATEMENT

My name is Tom Hovenden and I am the Secretary-Manager of the Idaho Cattle Feeders Association.

I must admit that we do not have too many direct problems with the Bureau of Land Management and the public domain at our feedlots. But Cattle Feeders have a very direct interest in the proposal under discussion today. You are tampering with one of our basic sources of supply. The proposed grazing cuts are shocking. We believe them to be unwarranted. We urge the Bureau to find a better solution at this time. For too long a time this question has been dragging on.

If the proposed grazing cuts in the Challis unit ~~is~~ are carried out in all units, this will mean a drastic reduction in western cattle numbers. We need the production from these grazing areas. We particularly need this production in Idaho.

I am talking about a very complex problem. We feed cattle in Idaho. And these cattle on feed are necessary because we grow potatoes. These cattle in our feedlots consume the by-products of potato processing.

Appendix B to this report shows the latest tabulation of Idaho potato production and potato processing in the United States. Isn't it amazing, 86% of all of the potatoes processed in this country were processed in Idaho. Now we can't throw that waste into the river. It has value and we make use of it in our cattle feeding industry.

I am not an expert on the subject of range management. But I will say that I am a keen student of cattle numbers and an expert in interpreting the meaning of these numbers. Appendix B was taken from one of my studies that accurately predicted the recent turn around in the cattle market.

Let us look at the relationship between total cows and people in the United States. The bare figure of 49 million cows has little meaning to anyone. A better way to look at cow numbers is to analyze just how many cows we have per 100 people. Imagine, if you will, a village of 100 people. How many cows does it take to keep them supplied with beef? This sheet shows this cows to people relation ship from 1950 to date.

THE IDAHO CATTLE FEEDERS ASSOCIATION, INC.
POST OFFICE BOX 5755
BOISE, IDAHO 83705

CHART B

YR	(-000) JAN. 1 USDA COWS	(-000) NET DOMESTIC SLAUGHTER	SLAUGHTER TO COWS RATIO	PER CENT ANNUAL CHANGE CATTLE NUMBERS	JAN. 1 COWS PER 100 PEOPLE	JAN. 1 CENSUS PEOPLE (MILLIONS)	(-000) CALF SLAUGHTER
50	37,946	28,676	75.57	+5.28	24.98	151.9	10,501
51	39,415	25,762	65.36	+7.30	25.59	154.0	8,902
52	41,225	27,887	67.65	+7.00	26.36	156.4	9,388
53	44,030	36,487	82.87	+1.53	27.69	159.0	12,200
54	46,045	39,096	84.91	+0.95	28.44	161.9	13,270
55	46,240	39,180	84.73	-0.72	28.01	165.1	12,864
56	45,460	40,635	89.39	-3.17	27.04	168.1	12,999
57	44,115	38,578	87.45	-1.81	25.77	171.2	12,353
58	42,790	33,013	77.15	+2.35	24.58	174.1	9,738
59	42,680	31,156	73.00	+3.12	24.10	177.1	8,072
60	43,325	34,032	78.55	+1.52	24.07	180.0	8,615
61	44,045	33,563	74.44	+2.73	24.07	183.0	8,080
62	45,086	33,574	74.47	+4.10	24.27	185.8	7,857
63	46,399	32,470	69.98	+3.27	24.61	188.5	7,204
64	47,868	38,839	81.14	+1.02	24.94	191.9	7,632
65	48,780	39,917	81.83	-0.13	25.21	193.5	7,780
66	47,990	40,004	83.36	-0.07	24.53	195.6	6,863
67	47,495	39,731	83.65	+0.54	24.05	197.5	6,110
68	47,685	40,061	84.01	+0.58	23.91	199.4	5,616
69	48,040	39,611	82.45	+2.14	23.85	201.4	5,011
70	48,780	38,510	78.95	+1.97	23.94	203.8	4,203
71	49,786	38,845	78.02	+2.87	24.14	206.2	3,821
72	50,585	38,217	75.55	+3.12	24.30	208.2	3,184
73	52,542	35,660	67.87	+4.94	25.12	209.2	2,376
74	54,293	40,146	73.94	+3.36	25.67	211.5	3,172
75	56,682	50,289*	88.72	-2.92	26.61	213.0	5,406
76	54,974	47,964	87.25	-3.96	25.57	215.0	5,350
77	52,424	47,377	90.37	-5.39	24.24	216.3	5,527
78	49,677				22.83	217.6	

* Includes 4 million head exceptional death loss reported by USDA for 1975

78	49,677	42,225	85.00	-1.00	22.83	217.6	4,000

Number decrease as heavy feedlot slaughter continues in first half of 1978. This leaves 38,225,000 cattle to produce 107 pounds carcass per capita.

78	49,677	41,232	83.00	0.00	22.83	217.6	4,000

Sustained yield production, leaving 37,232,000 cattle for slaughter to yield 104.4 pounds of carcass beef per capita.

78	49,677	39,742	80.00	+1.50	22.83	217.6	4,000

This would yield 35,742,000 cattle for slaughter to yield 100.2 pounds of carcass beef per capita.

Appendix B

IDAHO CATTLE FEEDERS ASSOCIATION, INC.

NATIONAL CATTLEMEN'S ASSOCIATION

2120 AIRPORT WAY
P. O. BOX 5755 — BOISE, IDAHO 83705
AREA CODE 208/343-1615

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Shelley
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TOM OLSEN
Boise
EX-OFFICIO
FRANK HIGHT
Nyssa, OR
ALLIED INDUSTRIES
GARY ROHWER
Parma
SECTY-MANAGER
TOM HOVENDEN
Boise

At the start of this year, we had the least number of cows per 100 people that we have had in the 28 year history shown. One could go farther and find that this is lowest ratio in over 50 years.

And the numbers are still decreasing. This is bad news for the U.S. Consumer. It portends vastly increase beef prices in the future.

In June President Carter felt the squeeze from the consumer and increased import quotas. This further demoralized hard pressed cattle producers and they did not take heart and start increasing their herds.

Here we have another agency of the Federal government making proposals that will further decrease cow numbers, and squeeze the almighty consumer much harder in the years immediately ahead of us.

This is all very incongruous. It is very bad palnning! Will the authors of this plan come forth and boast of decreasing cow numbers when the full realization of this comes to light in the market basket?

I can safely predict that we will have less than 22 cows per 100 people on January 1, 1979. We will have a cow herd smaller than we had in 1963 with 188.5 million people compared to our current population of about 218 million, not counting 8 to 12 million illegal aliens.

Instead of cows we are going to raise the so called free and wild roaming horses, unmanageable creatures, off spring of domestic horses that have escaped captivity.

If they can't have beef, let them eat horse meat.

Tom Hovenden

IDAHO POTATOES

Idaho Potato Utilization Crop Years - 1968-1977

CROP YEAR	Production	SALES				USED ON FARM WHERE GROWN		
		Total	Fresh Sales 1/	Processed 2/	Other 3/	Total	Seed, Feed and Household use	Shrink & Loss
	Thousand Hundredweight							
1968	59,505	52,492	11,081	35,049	6,362	7,013	1,783	5,230
1969	69,870	60,925	12,773	41,063	7,089	8,945	1,465	7,480
1970	74,660	65,527	15,585	44,406	5,536	9,133	1,989	7,144
1971	77,290	68,360	17,130	46,311	4,919	8,930	1,830	7,100
1972	77,295	68,999	16,512	45,565	6,922	8,296	1,513	6,783
1973	78,965	71,620	14,503	51,255	5,862	7,345	1,028	6,317
1974	81,195	73,605	15,219	51,382	7,004	7,590	1,040	6,550
1975	78,475	70,558	15,343	46,147	4/9,068	7,917	1,247	6,670
1976	88,455	79,555	16,080	57,640	5,835	8,900	1,300	7,600
1977	88,200	79,027	17,970	52,644	4/8,413	9,173	1,473	7,700

1/ Federal State inspection less certified seed. 2/ Idaho potatoes processed in Idaho and Malheur County, Oregon. 3/ Potatoes sold for seed, livestock feed, and shipped under certificate of privilege. 4/ Large quantities used for feed.

* * * * * * *

Potato Processing - Crop Years 1968-1977

CROP YEAR	Received From IDAHO		Other States	Total Processed 1/
	Quantity	Percent Idaho Prod. Processed		
	Thousands	Percent	Thousand Hundredweight	
1968	35,049	58.9	2,308	37,357
1969	41,063	58.8	3,349	44,412
1970	44,406	59.5	2,323	46,729
1971	46,311	59.9	3,631	49,942
1972	45,565	58.9	3,650	49,215
1973	51,255	64.9	4,250	55,505
1974	51,382	63.3	6,786	58,168
1975	46,147	58.8	10,850	56,997
1976	57,640	65.2	10,389	68,029
1977	52,644	59.7	8,617	61,261

1/ Prior to 1971 includes all processing in Idaho plus Idaho potatoes processed in Malheur County, Oregon. Beginning with the 1971 crop year, includes all processing in both Idaho and Malheur County.

Appendix A

(2)

Advisory Council on
Historic Preservation
1522 K Street N.W.
Washington, D.C. 20005

September 8, 1978

Mr. Larry L. Woodard
Acting State Director, Idaho
Bureau of Land Management
Federal Building, Box 042
550 W. Fort Street
Boise, Idaho 83724

Dear Mr. Woodard:

This is in response to your undated request for comments on the draft supplemental environmental statement (DSES) for the proposed Challis Grazing Unit, Idaho. We have reviewed the DSES and note that the undertaking may affect numerous cultural resources that may be eligible for inclusion in the National Register of Historic Places.

Pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) Federal agencies must, prior to the approval of the expenditure of any Federal funds or prior to the granting of any license, permit, or other approval for an undertaking, afford the Council an opportunity to comment on the effect of the undertaking upon properties included in or eligible for inclusion in the National Register.

Until the requirements of Section 106 are met, the Council considers the DSES incomplete in its treatment of historical, archeological, architectural and cultural resources. To remedy this deficiency, the Council will provide, in accordance with its "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800), substantive comments on the effect of the undertaking on these properties. Please call Brit Allan Storey at (303) 234-4946, an FTS number, to assist you in completing this process.

Sincerely yours,

Louis S. Wall
Assistant Director, Office of
Review and Compliance, Denver

The Council is an independent unit of the Executive Branch of the Federal Government charged by the Act of October 15, 1966 to advise the President and Congress in the field of Historic Preservation.

922

(3)

TROUT UNLIMITED
NATIONAL HEADQUARTERS
4260 E. Evans Avenue
Denver, Colorado 80222
303/757-7144

MICHAEL OWEN
PRESIDENT

September 14, 1978

State Director
Bureau of Land Management
Federal Building
Box 042
Boise, ID 83724

Dear Director:

A review of the Draft Supplement for the Challis Environmental Impact Statement has been conducted. BLM discloses that should the proposed action be implemented, there would be no appreciable habitat improvement for anadromous or resident fish within the Challis unit. The failure of BLM to propose a livestock management plan which would benefit the fishery resource could be interpreted as a stage setting precedent for policy of BLM for managing fisheries habitat in Idaho. It is alarming to Trout Unlimited that BLM recommends taking the "business as usual approach", particularly when it is considered that waters of the Challis unit, especially for anadromous fish, are among the most important ones for fish production on BLM administered lands in the state.

Regardless of initial impressions of the Supplement, Trout Unlimited anticipates that after comments from reviewers are received and the myriad of factors relevant to the problem are considered, BLM will initiate a program in the unit equitable for all resources including fisheries. It is recognized that according to opinions expressed in communications printed in the original draft, individuals in the Challis area are resolutely opposed to BLM implementing special management approaches for aquatic habitat. However, public lands are owned by all citizens of the United States and BLM, as a steward, has the responsibility to comply with Nation-wide interests to accomplish balanced resource management goals.

If BLM neglects to enhance habitat for anadromous fish in the Challis unit, there would be a deviation from commitments for BLM designated sensitive species, because anadromous fish are listed for Idaho. According to BLM policy, habitat for sensitive species should be managed to prevent the species from becoming threatened or endangered. Because of the array of problems in the Columbia River system affecting anadromous fish, land management agencies, including BLM, should take advantage of every opportunity for improving conditions for survival of the runs.

Should BLM not improve habitat for anadromous fish in the unit, there would be a failure to comply with the Fishery Conservation Act of 1976 (Public Law 94-265) which mandates anadromous fish shall be managed throughout the course of their range. Additionally, Title II, Section 201(a) of the Federal Land Policy and Management Act would be violated. The Act prescribes BLM obligations for managing habitat for areas of critical environmental concern. In Idaho, habitat for sensitive fish species such as steelhead and salmon would obviously be in the critical environmental concern category. .It is also our interpretation that Executive Order 11990 which pertains to the Protection of Wetlands (dated May 24, 1977 and signed by President Carter) applies to streamside habitat in the Challis unit. To comply with the order, BLM will have to take measures to accomodate requirements which prescribe that "Each agency shall provide leadership and take action to minimize destruction, loss or degradation of wetlands..".

In the Supplement on Page 2-37, siltation is identified as a factor adverse to fish production in streams of the Challis unit. Should BLM administrators in Idaho deviate from official BLM policy (refer to Appendix 2-C) for lands unsuitable for grazing, there would be avoidable accelerated erosion. To comply with disclosure requirements of the National Environmental Policy Act (NEPA), it will be necessary for BLM to indicate how much sediment would enter streams as a result of deviation from policy and then to project impacts on fish populations. To make impact projections meaningful, sediment predictions should be presented on a stream-specific basis. Additionally, it will be necessary for ramifications of the deviation on Public Law 92-500 (Federal Water Pollution Act) requirements to be addressed. Also, implications of the deviation will have to be evaluated in terms of compliance with Executive Order 11990.

On page 3-28 of the Supplement, it is indicated that wildlife is responsible for part of the aquatic habitat degradation. To substantiate the supposition, what site-specific data can be cited by BLM? Unless proof exists that damage has indeed been caused by wildlife in the Challis unit, the supposition is purely speculative, and is designed solely for the purpose of shifting the blame from substandard livestock management practices which have prevailed. Also on Page 3-30, wildlife grazing is identified as a cause of accelerated erosion and stream siltation in the Road Creek drainage. Again, it must be asked what proof exists? To comply with disclosure requirements of NEPA, it will be necessary for BLM to address questions we have posed about impacts of wildlife grazing and to define the relative degree of aquatic habitat damage attributable to domestic livestock, wildlife and wild horses on a stream-specific basis.

Herd Creek is identified as a major spawning stream in the unit (page 2-37). The creek, in fact, is the most important anadromous fish producing creek in the Challis unit. It can be erroneously inferred after reading Chapter II that dewatering and loss of fish through unscreened diversions are the major problems affecting salmonid production in the creek. In fact, the problem is improper livestock management which BLM has the jurisdiction to rectify. The system which is in effect (and the one proposed) for Herd Creek causes bank damage and siltation particularly during early spring use periods. During grazing treatments other than early spring use, the habitat does not recover and impaired habitat conditions are perpetuated. If a management system were to be implemented which would permit habitat to recover, the carrying capacity of the creek would be increased and could compensate for effects of siltation.

Trout Unlimited does not support those who irresponsibly advocate removal of livestock from the public lands. We, in fact, recognize that domestic stock consumption of range forage is a legitimate and a desirable use provided proper management practices prevail. We encourage BLM to exercise its responsibility for improving livestock management approaches and to proceed with the job it is capable of doing.

Sincerely,

Michael Owen
President

cc: Keith Argow, Executive Director

STATE OF IDAHO

DEPARTMENT OF LANDS
STATEHOUSE, BOISE, IDAHO 83720
GORDON C. TROMBLEY
DIRECTOR

STATE BOARD OF LAND COMMISSIONERS
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JOE R. WILLIAMS
STATE AUDITOR
ROY TRUBY
SUPT OF PUBLIC INSTRUCTION

September 15, 1978

Mr. William L. Mathews, State Director
Bureau of Land Management
Federal Building, 550 W. Fort Street
Boise, Idaho 83724

Dear Mr. Mathews:

Enclosed are the Idaho Department of Lands' comments on the Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit.

This department's position on the proposals for the Challis Unit has not changed since the original draft statement. All the proposals appear to severely reduce or eliminate livestock grazing on public lands with little or no sensitivity to the impacts on the livestock permittees, local economics, or other land ownerships such as state endowment land.

The Department of lands has yet to be invited to participate in the Challis Unit Plan. My comment in 1976 still applies. "Although requested in September, 1975, the Idaho Department of Lands has not yet been invited to participate in the development of the Challis Unit Allotment Management Plans or the Environmental Impact Statement although we hold nearly 18,000 acres in the Challis Unit."

The potential impacts of the proposed action on endowment lands is difficult to measure. If the exchange-use on state lands is reduced proportionate to the reduction proposed, the impact could be severe. The only alternative for the State would be to exchange the lands for federal lands in another geographic area.

Unfortunately, even land exchange may not be a practical approach. Nearly 50,000 acres of BLM lands are presently in advanced stages of the land exchange process with this department. Three exchanges totalling approximately 15,800 acres have been appraised, but efforts to consummate just one land exchange have yet to be successful.

Thank you for this opportunity to present my comments.

Sincerely,

GORDON C. TROMBLEY
Director

GCT:fb

Enclosure

EQUAL OPPORTUNITY EMPLOYER

STATE OF IDAHO
DEPARTMENT OF LANDS

Subject: Comments on Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit - U.S. Department of The Interior, Bureau of Land Management

Upon review of the Draft Supplemental Environmental Statement for the Challis Planning Unit, I find a number of inconsistencies between this statement and the original draft and the later, Final Environmental Impact Statement which were developed in May 1976 and January 1977. Most notable of these inconsistencies is the difference in the proposed and present livestock use as reported in the various statements.

In 1975 (according to Table 1-1), 18,062 animal unit months of active use were listed. In addition, 3,897 animal unit months of non-use were taken at the discretion of the permittees for a total license of 21,959 animal unit months. According to the previous documents an average of 21,908 AUMs of qualifications have been recorded annually on the Challis Unit, instead of the 17,444 stated in the Draft Supplemental Environmental Statement. In addition to this, 948 animal unit months of exchange use were authorized in the various allotments, most of this exchange use being on state endowment lands. The total licensed permitted use on the Challis Planning Unit has not been less than 21,114 animal unit months since 1948. In 1975 the total licensed use was 21,959 AUMs. The proposed use of 10,436 is only 47.5% of the former use: not 60% as stated in the publication. It is also 53% (9,236 AUMs) less than the 19,672 AUMs suggested for livestock use in the 1977 Final Environmental Impact Statement.

In this latest supplement, and consistent with the language in the two former documents, a reduction of livestock use seems to be predestined. Reductions in livestock use, according to the authors, equate almost equally to increases in wildlife habitat. Such is seldom the case in reality.

Consistent with the prior statements, the principles of rest rotation grazing have not been followed. The restrictions placed on grazing management programs are largely responsible for the heavy reductions in livestock numbers that have been recommended. The restriction to not graze more than 50% of the current year's forage plants by grazing ungulates is unnecessarily restrictive. This means that in any grazing system, when the average utilization reaches 50% in any field, the livestock must be moved. In such cases actual utilization of forage in a 3-pasture rest-rotation system would be limited to 33-1/3% in an allotment.

Proper use factors were designed to apply to a new grazing unit, as a rule of thumb, when no grazing history has existed. The area in question has been grazed for more than 100 years. There is no shortage of grazing history. On-the-ground managerial decision-making is required, not "canned" forms where you go "by the numbers".

Another grazing management principle that is violated is the principle of flexibility. To restrict permittees to a rigid program for 15 years does not make use of the management expertise of the Bureau of Land Management. Management decisions must be made daily, and adjustments must be made daily if necessary. Under this system adjustments cannot be made in a prompt and regular fashion.

Another principle of good range management that has been aborted in this program is that of cooperation and coordination. The involved people, including agencies as well as the permittees, have not been taken in as cooperative partners in this proposal. Does the BLM intend to disregard the wishes or plans of State Agencies and local people? During the preparation of this document the Idaho Department of Lands was not asked to join in the planning process, even though the Department holds nearly 18,000 acres of land within the Unit. In order for any of the management programs that are proposed to function properly it will require the cooperation of the Idaho Department of Lands as well as the permittees and other agencies involved. As stated in our original comments on the first Draft of the Challis Unit Environmental Impact Statement, the Idaho Department of Lands has considerable resource data on the 18,000 acres of endowment lands within the Challis Planning Unit. This data still remains available, but has not been requested.

The siltation data relative to livestock grazing is grossly exaggerated. Considerable research has been done, much of it in Idaho, on the Reynolds Creek Experimental Watershed as well as in other areas that discounts the contribution of livestock grazing to increased sedimentation on a watershed, particularly in a grazing management system.

The proposed action recommends reducing cattle numbers from in excess of 7,700 to 3,722. Based on the other incomplete figures in the supplement, the 7,700 head figure is suspect. Based on 19,672 AUMs of livestock use recommended in the 1977 E.S., it must be assumed that the actual number of cattle use is 8.8% greater than stated, or approximately 8,400 head. This decision is made prior to any implementation of management. Most management systems which have been implemented in the past 10 to 15 years have utilized a small (perhaps as much as 30%) voluntary reduction in livestock numbers, until improvements and facilities were constructed. Then, after the systems have been fully implemented, the original numbers have been restored. In most cases increases in livestock numbers above the original numbers have become necessary due to the improved vegetative conditions.

Many of the grazing systems, including the Morgan Creek System, were developed primarily to benefit wildlife habitat, using livestock as a management tool. Again, repeating our comments of 1975, no consideration of the progress of other management units, such as Morgan Creek, has been referred to in this document.

The wild horse problem demands immediate attention. Horse numbers must be controlled before the range resources are seriously depleted, and before grazing systems can be implemented.

The objectives of increasing livestock forage production to 17,500 AUMs within the 15 year time frame is professionally questionable. This is still 2,100 AUMs less than what is presently utilized in the unit. Such unrealistic and unrewarding goals over such a long time frame tend to discourage participation and involvement by permittees and other agencies.

The forage allocations as listed on pages 1-9 appear unrealistic in this day of modern range management capabilities. A 50-60% utilization factor overall in an allotment is more realistic. This would take into consideration early and late season use coupled with rested pastures and deferred pastures. Reserving any additional forage reduces the impact of livestock grazing as a tool to manipulate vegetation and does little to improve the vigor of the plants over a less conservative system. The only thing that such conservatism accomplishes is to promote

additional hardship on the livestock operators in the area. Again, this seems to emanate from the philosophy that is projected through these documents that all reductions in livestock numbers equate to improve wildlife habitat situations, which is not necessarily true.

The allocation of forage to 3,722 cattle as listed in Tables 1-6 means very little unless it can be compared to the present allocation of forage under existing conditions. The document is incomplete without that information. There is very little information on present livestock use in the various allotments with which to compare the proposed use.

On pages 1-13 the discussion of rest rotation is again incorrect because of the constraints placed on the system limiting utilization to not exceed 50% of the current season's growth. Reductions in livestock numbers will also tend to reduce the amount of seed trampling that would be affected by heavier concentrations of livestock.

On pages 1-20 under inter-relationships, I repeat that the Idaho Department of Lands has not been contacted in the development of this latest document, even though the next to the last statement says "close coordination between the various land managing agencies is required in order to accomplish common goals and avoid resource use conflicts".

Under assumptions and analysis guidelines, pages 1-21, it appears that prior to the implementation of any of the allotment management plans, environmental analysis records must be made again, even after this environmental impact statement has been completed. Will the process never end? After an expenditure of more than $4 million and a tremendous impact on the future of the permittees, still more studies appear questionable.

On pages 1-22 a list of range improvements appears, which is impressive. Was input obtained from local people who are familiar with the countryside and the way the livestock, game and wild horses use the country, in the planning of these improvements? Without the input of these people many thousands of dollars may be wasted in the faulty design and location of improvements. Throughout the West this has been historically a serious deficiency.

The discussion on page 2-1, on Range Condition Class ratings based on the current stage of ecological plant succession is misleading to most laymen. The ratings of "excellent, good, fair and poor" do not equate to palatability, production or utility, but apply strictly to a specific stage of vegetative composition. Ecologists, especially foresters, range managers and wildlife biologists, have long recognized that stages of ecological plant succession well below the climax level may be most desirable for livestock and wildlife. An example that graphically illustrates such a situation is the Lochsa Elk Range in northern Idaho. Fires eliminated the climax vegetation (white pine and fir). The first stage of secondary plant succession (probably "poor" condition class) was the growth of shrubs such as willow, red stem ceonothus, alders, etc. This condition class produced some of the finest elk range and elk population dynamics in history. As the browsed shrubs grew higher ("fair to good" condition class) and above the reach of elk, big game conditions and populations declined. As the site developed upward toward the climax fir and pine stage ("good to excellent"conditions), the situation reached a point where sportsmen, wildlife biologists, and now the general public are clamoring for controlled burning to recommence the cycle (reduce the range condition class to "poor or fair").

improvements were under construction and grazing management plans were being developed. This alternative represents the most commonly accepted method of implementing range management systems currently in existence.

Under Alternative I, Analysis of Impacts, it states that the inventory indicates that an overall 40% downward adjustment in livestock grazing is also needed in order to stock the grazing units at proper carrying capacities. This is interesting in view of the fact that such 40% downward reductions in livestock numbers were not needed to implement the adjacent Morgan Creek Grazing Plan which has basically similar characteristics in soils and vegetation.

All the alternatives from 1 through 6 considered in the environmental statement are impractical to implement, as is the proposed action. Even alternative 3, which is called in one part of the plan "minimum constraints on livestock grazing" and in another part of the plan "maximum livestock grazing", calls for a 42% reduction in livestock use.

In summary, the alternatives proposed in the Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit will be unrealistic and will be unacceptable, not only to the permittees involved in the Challis Unit but to the Idaho Department of Lands, the State of Idaho, the livestock industry and the Nation. It would be unpalatable to any individual agency or organization interested in the well-being of our range resources and the basic resource industries that utilize our natural resources. A strong Nation is based on strong resources and a strong economy. All wealth emanates from the basic resource industries of agriculture, mining and forestry. To weaken those basic resource industries will weaken the economy and the Nation.

The Idaho Department of Lands is opposed to the philosophy behind the Environmental Statements as written for the Challis Planning Unit. Only at such time as true cooperative and coordinated resource management plans can be developed with the full cooperation of the permittees and other state and federal agencies will meaningful management be implemented on the land.

the present or past use. There is no information to indicate the historical use in the area which might indicate the conditions that existed in the past which may have led to certain problems that may exist in the area today. The conditions that lead to problems may also be used to indicate appropriate corrective actions.

On page 2-46, under Livestock Grazing, is a very general statement regarding the production of range beef cattle in the Challis Planning Unit. Certainly an industry that faces such serious impact from this action deserves more than one-half page. Details of past livestock numbers and use patterns would also facilitate evaluation of the proposed action.

Table 2-27 on page 2-48 indicates the number of people employed in each major industry in Custer County in 1975 and 1995. The figures in 1995 will certainly be true if this plan is implemented. There is no mention, however, that the services, state and local, and non-agricultural sectors would dry up if the agricultural and mining economies were eliminated, as actions proposed in this document would ultimately lead to. Most of the supporting services in Custer County are there because of the agricultural and mining economy.

Table 2-30, Average Returns for 110 Ranches in Custer County, Idaho, is another generality. Reviewers of this document should be concerned with the welfare of the 39 operators in the Challis Planning Unit. There is no information that would project the impact of the proposed action on the 39 operators in that Unit as compared to their present situation. There is no question that the impact on Custer County is important, but by the time all the other planning units in Custer County go through the same process as the Challis Planning Unit, the livestock industry in the entire county may be decimated.

The public values and attitudes based on 12 interviews conducted by BLM social scientists on page 2-52 are quite accurate. (The Department of Lands notes with interest that 96% of Custer County is controlled by government agencies which include BLM, the Forest Service, and the Idaho Department of Fish & Game. How many acres does the Idaho Fish & Game Department own in Custer County as compared to the Idaho Public Schools?) These comments by local people should be given the highest credibility. They represent the same comments that those of us in Idaho hear daily from representatives of Custer County. They are true concerns and should not be discounted or disregarded by anyone. As this department has pointed out in the past, the only alternative to the serious reductions in livestock numbers proposed by this and other environmental statements is to sell their base properties to recreational developers. Such action could, in turn, add far more sediment and pollution to the streams than the present grazing programs now produce.

On page 3-39, again on public values and attitudes, it states that a number of respondents remarked that area ranchers have been losing money for several years. This is certainly no revelation. Agriculture, in general, has a history of being feast or famine. It is not at all uncommon for livestock operators to lose modest or greater amounts of money for several years and then in the cycles of higher livestock prices to regain those losses and move ahead considerably in those two or three profitable years out of each seven or eight. This has been the history of the industry and will continue to be the trait of this particular industry.

In reviewing the various alternatives to the proposed use, it appears that a logical alternative has been overlooked. That logical alternative would be to maintain the current licensed use but to include the proposals for range improvements and grazing systems as outlined in the proposed action. This alternative could be modified to include some voluntary reductions in livestock numbers while

Similar but less graphic examples can be provided to show that climax stage or even good range conditions on certain sites may be less desirable for wildlife or livestock than fair or even poor condition as defined in the ecological site description. Watershed conditions would suffer little, if any. The purpose of the illustration is to demonstrate that a good or excellent condition class rating does not mean better wildlife habitat, watershed or grazing capacity.

The fallacy of the rating system is that it does not emphasize volume or vegetative cover and its soil stabilizing characteristics. Instead, the composition of the forage is emphasized, not from the viewpoint of utility value, but purely from a comparison to climax, however practical and realistically achievable that stage might be.

Questions also arise as to the potential quality of the evaluations of the ecological sites. Noted ecologists often disagree as to the true climax vegetative composition on many sites. The limited expertise available to each district of any governmental agency brings one to question the accuracy of many of the type and condition class determinations as this system is applied to every planning unit in the West.

As a tool to evaluate management or to estimate site potential, capabilities and limitations, site analysis can be useful. To illustrate range condition class the process can be very misleading. Climax range condition is not necessarily the most desirable objective for a multiple-use resource management plan.

The discussion of trend on page 2-1 and the methodology as described in Appendix 2-D is valid for theoretical projections. Based on the studies cited, the conclusion is accurate. The referenced studies do not, however, discourage the use of past condition studies or data collected on similar sites which have been subjected to grazing treatments similar to those planned in the Challis Unit. There is no question that a number of range studies have been conducted on the Challis Unit over the years. Trend data have been developed for many of the sites. The response to similar grazing systems on the Morgan Creek Unit has undoubtedly been measured. Obviously there is data available from the Herd Creek Coordinated Plan within the Challis Unit. Could not this factual data be cited rather than mere projections for the future based strictly on hypothesis?

On page 2-5, Table 2-3, it shows the present and potential AUM production tabulated by allotment. The present total AUMs is approximately 64,900. Of that, only 25,300 have been allocated to wildlife, livestock and wild horses. This represents only 39% of the total available AUM production, and according to the footnote below Table 2-3, all figures are based on proper use of the forage plants and were computed by individual vegetation types within each allotment. There are nearly 40,000 AUMs that are unavailable to livestock, wildlife or horses, and this is at the present horse capacity of 9,000 AUMs. If these figures are accurate, then there are 40,000 AUMs available after considering proper use factors, being already reduced for wildlife and livestock, and, if you choose, wild horses. These figures tend to discredit any of the proposals offered in this document.

Table 2-6 on page 2-8 again points out the ultra-conservative allocation of forage to livestock. Again, there is no data for current use.

In Section 2 there are 15 pages on wildlife and wild horses. There is only one-half page describing present livestock use and it is extremely general. There is no specific data to compare the proposed action or any of the alternatives with the current situation. This is very misleading, and very difficult to relate to

(5)

Challis Idaho
Sept 14, 1978

Bureau of Land Management
Dear Sirs:

This is in regard to the B. L. M Management Plan of the Challis planning unit.

Wild life and domestic Animals Can, And do live harmonicisly together. Weve watched this right here in our own fields when the deer come down in the fall. Theris plenty of range for all. Especially if the range is managed in a pasture rotation system like you have working so well in the Morgan Creek Area. We know this is true by the fat cows + calves that come in from range in the fall and by the fat deer + elk that are harvested each year.

As for the wild horses: We already have so much wilderness area, why not move the wild horses into that

Anne and let them be the wild horses they are supposed to be? You managed the range for years to the benefit of the domestic animal and wild life. Now all of a sudden these wild horses seem to have preference over all. They will only destroy the range and eventually it will lead to their own destruction.

This country needs meat, and the by-products that come from meat animals.

If they continue to take the range away, they will soon find that the meat Animals are the endangered species. Ranchers just don't have enough land to keep their cattle in, the year around!! So they will be forced out of business!! Then the people as a whole will suffer too. I'd like suggest that the wild horses be put in the Wilderness Area and leave this area as it was.

Arbilla Nelson
Challis Idaho

Challis Idaho
Sept. 15, 1978

Bureau of Land Management
Idaho

I think you are wrong in your land Study. Changes in the past have been managed for the good of the range. Under your proposal you are throwing that away.

Your statement is contradictory in that Public range goes hand in hand with all phases of agriculture and is vital to food production in U.S.A.

The management system used on Morgan Creek could be implemented there for the good of all. Wild life, recreation, Watershed and forest would all be improved.

To turn it over to a band of wild horses would do nothing but damage to the range and the riparians.

I hope you would give some consideration to all aspects of our area trying to please a few people is ill.

Sincerely Yours
Earl T. Nelson
Challis, Idaho 83226

Larry Nelson
Sept. 15, 1978

Dear Sir;

The BLM management plan of the Challis planning unit as proposed by the Environmental impact statement will have a very devistating adverse effect on the environment, ecology local economy and even some effect on national stability of our nation. You are in fact trading your most valuable tool of range land management (which is domestic livestock) for a non controllable wild horse herd which has many years ago proven to be very detramental to the ranges.

Cattle can and are removed in winter.
Wild horses graze the year around.
Cattle can be rotated to rest an area.
Wild horses graze where they want.
Cattle can be drive into and forced to use areas with less water or on steeper ground.
Wild horses go where they want.
Cattle number can be controlled
Wild horse number is difficult if not impossable to control.
Cattle improve wildlife livestock habitat by pruning brush brush.
Wild horses offer young out stem to the roots which destroy wildlife habitat.

Cattlemen pay range assessments to improve ranges
Wild horse groups do not pay assessments.
Cattle, Cattle ranches, Cattle profit are all taxes
Wild horses are not tax but become a tax burden to the tax payers.
Cattle provide food and leather
Wild horses provide nothing.
Cattle provide much local employment.
Wild horses provide none.

Much of the deterioration that is being blamed on modern ranchers, actually occured in the 19th and early 20th centuries as a result of over population of wild horses. It was the ranchers who corrected the problem by rounding up the horses & marketing them. Since then the ranchers & federal government has done a lot of work time trouble & effence to improve the ranges, and they are improving. Why should we turn it back to the horses. Sure it's nice to see a few wild horses. It's also nice to see some antalope, deer, elk, sage hens and fish. Wild horses are a greater threat to these than cattle. Through the rest rotation plan cattle can even improve wild life habitat. They say that wild horses are a part of the american heritage. well so is cattle and range type cattle

ranching. They deserve to be conserved also.

Americans have spent 200 years improving and developing a strong nation with a high standard of living. Turning ranges back to wild horses is just another of many recent trends that seem to be only interested in trying to distroy all that has been accomplished. America isn't as stable as we would like to think it is. All it would take is a famine or a depression and the American people themselves would vote america right out of existance. I think we should be looking at things from a logical stand point. Even such minor things as how we use our ranges could have a devistating effect.

Thank you
Larry Nelson

(8)

United States Department of the Interior

NATIONAL PARK SERVICE
Pacific Northwest Region
Fourth and Pike Building
Seattle, Washington 98101

IN REPLY REFER TO:

L7619(PNR)PCC

September 22, 1978

Mr. William Mathews
State Director
Bureau of Land Management
P.O. Box 042
Boise, Idaho 83724

Dear Mr. Mathews:

We have reviewed the draft supplemental environmental statement on a revised range management program for the Challis Grazing Unit, Idaho (DES 78-32). The service and responsibilities of this agency will not be affected.

Sincerely yours,

Charles F. Bohannon
Acting Associate Regional Director,
Planning and Resource Preservation

(9)

E.C.I.P.D.A.

EAST-CENTRAL IDAHO PLANNING AND DEVELOPMENT ASSOCIATION, INC.

12 NORTH CENTER • REXBURG, IDAHO 83440
P.O. BOX 330 • 356-4524

Member Counties
Bonneville
Butte
Clark
Custer
Fremont
Jefferson
Lemhi
Madison
Teton

September 21, 1978

Mr. William L. Mathews, Acting State Director
Bureau of Land Management
Federal Building
Box 042
Boise, ID 83724

Dear Mr. Mathews:

We are herewith respectfully submitting the comment of the East-Central Idaho Planning and Development Association, Inc., a private non-profit planning and development corporation broadly representative of the local public officials in our nine member counties plus other interests. We are acquainted with the effort which went into the Draft Supplemental Environmental Statement on the Challis Unit, however we find the Environmental Statement and the process by which it was developed deficient in many respects.

The major concerns of the East-Central Idaho Planning and Development Association are; (1) whether the cattle grazing cuts proposed by the Draft ES are necessary; (2) that cumulative effects of grazing cuts proposed by both the BLM and the Forest Service are ignored by those agencies; (3) that the input of local people who are familiar with operative conditions are not shown in the supplemental environmental statement to have been considered; and (4) that economic effects are not properly projected.

Unless otherwise identified, references are to pages in the Draft Supplemental Environmental Statement on the Revised Management Program for the Challis Planning Unit.

1. Grazing Cuts

The first issue is whether the cuts are necessary, The previous Final Environmental Impact Statement for the Challis Planning Unit released by the Bureau of Land Management in 1977 proposed 19,672 AUM's for domestic animals and 13,871 AUM's of grazing for wildlife including horses. The Draft Supplemental Environmental Statement for the Challis Planning Unit just released does not clearly identify why these allotments were cut to 10,436 AUM's for cattle and 10,202 AUM's for all wildlife as shown on Page 1-2.

Page 2

Page 2-5 says that figures for present total AUM's "are based on proper use of the forage plants" and then says 30,297 spring AUM's are available and 34,617 summer SUM's, yet on Supplement page 1-2, only 20,638 total AUM's are proposed. Why is there such a large difference?

Because this Challis Environmental Statement will set the pattern for 211 more environmental statements across the United States, it is obvious that there are national pressures which effect the writing of this Environmental Statement. However, it seems that both the Bureau of Land Management and environmentalist who seek to protect our resources should be able to accept management of our grazing land which improves or stabilizes the range even though this management allows continued grazing at present or increased levels. The Morgan Creek grazing unit near Challis has been jointly managed by the Forest Service and Bureau of Land Management for seven (7) years, with a rest rotation grazing system. Similar rest rotation systems are in effect in areas of the Boise front, Payette River, Oneida County, and on the Oakley demonstration range. The Morgan Creek is not directly comparable to the grazing units in the Challis Planning Unit mostly due to differing precipitation. However, the Morgan Creek Unit does show that grazing and range improvement such as watering facilities and fences can be used as tools to improve the range without large cuts in the numbers of animals using the range. This indicates that the Bureau of Land Management needs to make and carry out a commitment to range improvements. For many years past local ranchers have made range improvements on their own. They have had little success getting the Bureau to make more. This range improvement should be done prior to any livestock reduction. Cows and wildlife have been grazing in the Challis area together for the past 100 years. The Bureau of Land Management has been involved in Range Management for over 30 years. Why doesn't the Bureau have records of range conditions and trends to allow the Bureau to show the effect of joint wildlife and livestock grazing upon the various grazing allotments within the Challis Planning Unit? Then it wouldn't have to use a theoretical system of allocation. How often will monitoring of range conditions occur once the proposed management program is implemented? Page 1-17 of the Draft Environmental Supplement only says routinely. How long after implementation of the Management Program will it take to establish trends to demonstrate the results of management proposed in the supplement? How soon will range conditions change under the new management program. Page 1-9 indicates 5 to 15 years while Page 3-15 implies 3 to 6 years.

Stock is allocated 83% of its carrying capacity and wildlife is allocated 87%. Stock AUM's will be cut an average of 48% from present conditions immediately, while wildlife will increase 15% which should take some time. According to Page 1-2 of the Supplement, wildlife (other than horses) will increase from 6,758 AUM's to 7,772 AUM's while horses will be cut over 6,000 AUM's. This wildlife reduction is 1,140 AUM's or 6.5% of the present cattle allotment and 10% of the proposed cattle allotment in the Supplement. Could these AUM's be used to cushion the cuts required in the first few years in the allotment management plans?

Page 3

Page 2-2 - Can allotments be maintained where the range condition trend is stable or up and only reduced where the trend is downward?

If 22% of area range condition trends are down and with a large cut in grazing by wildhorses and a limited rise in wildlife grazing, why isn't 22% cut in grazing of livestock enough rather than 50% until management improves conditions.

Why was grazing suitability determined by slope, water, and vigor as stated on Page 22 after growth was set aside for biological reserve? Stacking two sets of criteria allows only seven (7) pounds of forage from each hundred (100) pounds of vegitation grown.

As grazing was allocated 17,000 AUM's in the other Final ES and in the no change alternative number 1 of the supplement, why is grazing only given 12,000 AUM's in the Supplement alternative number 3 entitled, "Minimum Constraints on Livestock?"

As noted on Page 2-1, why were climax species chosen as the measure of quality of the vegetation? Often times climax growth is not as palatable to wildlife as transitational growth. If there is any data available to the Bureau of Land Management to show that climax growth would be most suitable to that wildlife occurring naturally, this should be included in the Environmental Statement.

Page 1-9 says that 50% of forage vegetation must remain unused to protect plant vigor and soil, yet Page 8-11 says the year long amount that can be removed is 25 to 30%; which limit will be used? Does this variation come from the rest/rotation system or will 33% more grazing reduction be required by later AMP's to implement rest rotation using three (3) pastures?

According to Bureau figures, there has been a downtrend in grazing on National Resource Lands since 1948. These figures are given in the Final Environmental Impact Statement. Why hasn't this decreased grazing improved the range?

According to Table 3-15 on Page 3-38, average use for most permittees is lower than current use of AUM's. Therefore the proposed cuts effect may be understated in the supplement.

In summary, many of the ranchers are in long-term family operations and they are as interested in maintaining good range conditions on the public land as are the BLM or responsible environmentalists. This is in both their short and long-term interest in producing the maximum size calf and healthiest cow which increase their return as noted on Page 14 of the ABT Associates, Inc. study which was done for the Bureau of Land Management.

The cuts proposed in livestock grazing are represented as necessary to protect wildlife which exists in the planning unit. Possible the Bureau has credited too much effectiveness to range management to maintain and increase wildlife populations. We would suggest that the Bureau coordinate very closely with the Idaho Fish and Game Department and their game management programs. The amount of hunting which the Fish and Game

Page 4

Department allows will also have a major impact on wildlife populations. This is explicitly recognized on Pages 13 and 15 of the economic study done by ABT Associates, Inc.

Antelope, deer, and elk forage does overlap the forage of livestock, whereas forage of Big Horn Sheep according to the Draft ES does not. Also Elk were introduced into the area in 1948. Why are they given preference immediately over livestock which were also introduced into the area (not naturally occurring)?

Page 3-32 says that fencing and cattle grazing may cause overgrazing by wildhorses or reduce their access to winter range. The Bureau proposed to reduce the horse herds. Shouldn't the first objective of the Bureau's wildhorse management be to remove or reduce those herds that are overgrazing or which would be kept from winter range by fences and thus this is no problem? As cattle are not on the range in winter, temporary fences could be used to avoid interfering with wildhorse migration.

Page 3-32 also says that cows and horses will be competing for forage, but the reduced number of cows and wildhorses will be spread over a larger area. This would seem to reduce their competition for forage, (1) because they are spread over a larger area, (2) because the vegetation growth has improved through management so that there is more vegetation available as forage on both a qualitative and quantitative basis.

Page 3-39 related game populations to carrying capacity. Pages 3-18, 3-19, and 3-20 raise the possibility of increased Big game herds. As range improvements and grazing cuts increase carrying capacity, will game populations be allowed to rise thus requiring more grazing cuts to improve their carrying capacity?

2. Cummulative Effects of Changing Management Plans

The second topic is the cumulative effect of the management proposals of the Bureau of Land Management and of the Forest Service. A cumulative effect can be compared to cutting down a tree with an axe. The first few blows do only minor damage but as they continue, finally the tree falls. In fact, this occurs before the tree is cut all the way through. The point of this analogy is one little bit of grazing reduction either by AUM's or by time allowed out to the allotment is not going to make much difference, but several will reduce the profit margin until the ranch can still operate cows but does not operate economically.

There are 60 planning units in Idaho and the Forest Service is looking at approximately 1,290,000 acres of the land they control in Custer County for inclusion in Wilderness Areas. Much of this million plus acres can be assumed to be suitable for livestock grazing as well as wildlife habitat. The Bureau of Land Management has recommended livestock grazing cuts in this supplement and the final impact statement previously done. The Forest Service plans reductions in grazing on their public lands as mentioned on Page 47 of the Idaho Supplement to the Draft Environmental Statement on the Roadless Area Review and

Page 5

Evaluation which was done in June of 1978 by the Forest Service. If both agencies continue such cuts on public land, the future of economic cattle grazing in Custer County and indeed throughout much of the West seems very bleak. We feel that the cumulative effects of their management plans do need to be addressed. Possibly all the planning units in one state could be summarized after the individual planning unit Environmental Statements have been done. If cattle herds are reduced throughout the West, beef prices will increase.

What will be the effect of the future environment assessment record on each allotment management plan which is required according to the supplement? If the environmental assessment can propose furthur grazing cuts, this extends the period of uncertainty for cattlemen and their investment in their operation which may continue to keep them at an uneconomical level of operation.

Page 1-3 - When will the Management Framework Plan Step 3 be completed?

Page 2-29 - The Bureau of Land Management is setting Wilderness policy. Will their survey of wilderness further reduce allotments?

3. Weighting of Local Comment and Concern

The third major issue concerns the value that the Bureau of Land Management gives to local input in their Draft process. Since this is public land, the public at large has the right to make comments on how they would like to see the land used. However, the public is often distant from the situation and unfamiliar with the specific problems or potential in a location. Local people who are living on the land are familiar with it. They do seem to have some right to expect their opinions and the opinions of trained resource managers, whether public or private, to be given more weight than the general comments of the public.

Page 9-1 speaks of coordination and consultation in preparing the supplement. The Idaho Department of Lands manages most of the 18,000 acres of State Land within the Challis Planning Unit. They are not listed in the Supplemental distribution list although they commented on the Final ES. Why were they not consulted?

There may be some feeling by both the Bureau of Land Management officials and the Public who are only dependent upon this draft supplement and the previous Final Environmental Impact Statement that local land users want to ruin the range to make a short-term profit. This is not the case as shown on Page 9 of the ABT study. This study states that ranchers voluntarily reduced their grazing to protect the range. After the ranchers thus tried to cooperate with BLM, their base grazing allotment was reduced even further in the Supplemental Draft ES because they had not been using all their grazing rights. Page 14 of the ABT study reports ranchers arguing that if they overgrazed the area, the animals gain less and therefore the rancher's revenue falls. Certainly if cases of abuse of the grazing resource exist, they need to be stopped and corrected. However, just as strongly, when cooperation to improve the grazing resource occurs, it should be rewarded.

Page 6

To show that local input is being evaluated, possibly it should be written more clearly into the draft. In sections where facts gathered by the Bureau or its consultants, counter statements made by local individuals or their consultants, this could also be mentioned. As it is, local people feel that their comments right or wrong are taken at public hearings and then left out of the ES.

If experience is the best teacher, the experience of those people on the ground managing cattle, viewing the game and the grass resources that exist should be taken into account by the trained range management of the Bureau and, parenthetically, the Forest Service. Again this brings us back, as far as input, to the fact that grazing has existed in the area for 100 years, the Bureau of Land Management has been operating in the area and has been responsible for the grazing resource since the passing of the Taylor Grazing Act 1934. It seems that there should be some local scientific data available from the Bureau of Land Management to show the actual trends rather than having to develop grazing manage-- ment plans. They cite the soil conservation survey practice of using this methodology. However, the soil conservation survey then sets carrying capacity by the actual effect of stock on the land and the range condition trend. The Bureau of Land Management used a different method. After studying the soil and ecology trends the Bureau projected allocations by slope and water criteria which in other instances has eliminated grazing according to local ranchers.

Modern range management uses grazing livestock to improve range conditions. Such modern management has been demonstrated in both the Herd Creek and Morgan Creek areas. The Bureau's Supplemental Environmental Statement should better reflect the possibility of this sort of management. Area ranchers and any range management experts would agree that the cattle need to be dispersed and management such as fences is required to rest vegetation so that it can be vigorous and support the optimum populations of both livestock and wildlife.

A useful place for local inputs could be proposed range improvements. Also one alternative might have described the type of range improvements and management local people want. Local permittees propose that present stocking rates by maintained, develop management plans, reduce wild horses to 162 and monitor trend conditions.

4. Economic Issues

The following economic questions occur in reading the supplemental and Final Environmental Statements.

The environmental impact state ment should take a closer look at the economic impact of the beef exported from Custer County to other area feed lots. Also the effect of imports or purchases by Custer County Cattlemen from outside Custer County itself. Although this specific data would not be as easy to obtain, generalizations might be helpful. A broader issue not very directly addressed by the Draft Environmental Statement is whether this part of Idaho with its scenic resources is to

become a playground for the rest of the state and nation or if it is to remain an economically productive area. If the basic desire of the Bureau of Land Management is to turn this into a playground, then this should be made more explicit and possibly some restitution given to existing land owners to help them adjust to a new economy based on tourism.

On Page 3-34 of the supplemental statement, the possibility is raised that permittees displaced from Bureau of Land Management grazing might be able to use private pasture for their cows and use either their own or another's land to raise hay. Considering that 96% of the land in the county is Federal land, how many acres are left in private ownership which could be used for agriculture production? Is this use of private land implied as a long range alternative to Bureau of Land Management grazing, or is this use of private land to occur for 15 years until the entire management program has had a chance to improve the vegetation?

Page 3-33 of the supplement says that to compensate reduction of AUM's, livestock operators will have to buy hay, lease pasture or reduce numbers. Yet on the same page BLM admits that, "There is very little irrigated or dry pasture to lease in the Challis area. The only alternative available for many of the range users would be to reduce their herds." How much land is available in acres for use as pasture, especially in the face of proposals in the supplement for housing and industrial growth?

Page 8 of the ABT study reported that herd size on the small ranches was determined by how much winter hay could be grown on the ranch. On page 13 they reported that starting sprinkler irrigation to raise more hay is too expensive for the average small and medium rancher. These facts seem to intensify the effect of BLM grazing cuts.

Page 3-34 says that there will be a loss of $307,000 of cattlemen's income for the 38 permittees. This would average $8,079 loss or reduction of 69 cows from 180 head herd which would be 38% of the average herd. What makes the Bureau of Land Management feel that if all of these 38 permittees are losing this much money, only seven (7) stockmen will be selling out?

On Page 3-39 of the draft it is said that only seven (7) ranchers on the east fork of the Salmon will be selling their land, either to recreational development or to other ranchers interested in consolidation into a larger operation? This question comes about because the data on 3-34 and 3-39 says that 13 ranchers will loose an average of 35% of their BLM allotment. Also, in the ABT Associates study, the nine (9) ranchers cited as representative of all the permittees said that, if not in debt, they would try to cut back their herds, but if ranching did not remain economically viable, they would have to sell out. Those who were in debt said that they would sell out immediately if faced with cutting their herd because of cuts in Bureau of Land Management grazing allotments. All of the representative ranchers said that selling out was a real possibility. Local estimates are that up to 26 ranchers will be forced to sell out. Page 12 of the ABT study reports, "Historically their (rancher's) profit margins have not been high enough to create the

required surplus during the other three years to cover the loss incurred in the forth year," by the proposed rest/rotation system.

Page 9 of the ABT study reports that on medium sized ranches, wives work. This can be interpreted as necessary work becaue the ranch is not now a profitable economic unit. These proposed grazing reductions would worsen the situation.

Page 3-39 concerns loss of jobs and income. It should show of the impact of the loss of the total $307,000 not merely $70 or $230,000 loss as was done. Would it be possible to break down the income figures more clearly to show how much motel, restaurant and other trade income, comes from tourists and how much comes from residents of the county. If $370,000 of income leaves the local economy, what impact would that have on local ranch suppliers?

It was good to see more disucssion of the impact of second home sales in the Draft Supplement than there was in the Final ES. Yet the section on Impacts of the Proposal, the discussion of second homes still seems inadequate. Page 3-39 says that as homes increase, the tax base will improve and page 3-40 says new homes will improve the tax situation. This has very seldom been the case in any rural area with second home subdivisions. Specifically, a study entitled, "Recreation Home Developments in Idaho: Five Case Studies," by Richard D. Payne, Ph.D., published at Boise State University in March of 1977, said that in the case of Island Park, cost to the county outweighed revenue.

Page 3-40 through 44 does not mention any impact from second home development on water quality, yet there is the chance of increased runoff, diversion of water for domestic needs and possibily sewage contamination. These impacts are noted on Page 3-31.

Page 3-44 claims that second homes would cause no damage to recreation. What about the disturbance of game and fish cited on Page 3-21 and 3-31?

Pages 3-18, 3-20, and 3-21 speak of the negative impact which residential developmental could have on big game populations. Although the Bureau of Land Management admits that recreational subdivisions will have an effect on wildlife and water quality and thus on recreation, no mention is made of ameliorative tactics to reduce this negative impact. Possibly the control of impacts would require cooperation and coordination with other federal and state agencies, however, this issue needs to be addressed.

We agree with the reduction of "wild" and abandoned horses. How soon after acceptance of the management program would these reductions be made?

Page 1-20 of the Supplement mentioned the proposal of the Tuscarora Mine, however, the Clayton Silver Mine which is in operation was not mentioned at all. Will this change in grazing management impact the mine?

The ES proposes to fence streams to improve fish habitat. Will fences be built only where brush cover is an inadequate barrier to protect the stream from livestock? If there are 22.5 miles of important anadromous streams how was it determined to only fence 3.25 miles as stated on Page 1-16 and 1-9?

Page 3-11 says Herd Creek Allotment range condition will still downtrend after management. Why is this? Present range conditions are improving by local judgement. This allotment is being used to study the effect of rest/rotation grazing on wildlife by Professor Peak from the University of Idaho.

On Page 3-34 the bottom paragraph should reference Table 3-15. In Table 1-4 antelope get 426 AUM's. Should this be for each season or the total for the three seasons; summer, spring, and fall?

We are definitely against alternatives 2, 5, and 6, Page 8-1.

Please include all of the ABT associates study in the final ES.

We have submitted this comment in hopes that it will have become more than an academic exercise for our Staff. We certainly look at this much more seriously. We view the Challis Unit as much more than a valuable ecosystem, more than a socio-economic unit - as people. Therefore, we hope that this viewpoint is given its appropriate weight in the "final analysis."

Respectfully yours,

Jack J. Weigand
Lemhi County Commissioner
President, ECIPDA

pc:sb

cc: For Public distribution

(10)

NEW MEXICO STATE CLEARINGHOUSE
DEPT. OF FINANCE & ADMINISTRATION
PLANNING DIVISION

REVIEW CERTIFICATION

MIS—5

STATE PLANNING DIVISION
505 Don Gaspar, Greer Building
Santa Fe, New Mexico 87503
(505) 827-2073

TO: Department of Interior
Box 042 Federal Building
Boise, Idaho 83724

DATE: September 11, 1978

Att: Larry L. Woodard

SUBJECT: Review of SAI No.: 79 08 1 094

REVIEW ACTION ON: ___Pre-application ___Final Application ___State/Area Plan _X_EIS	PROJECT TITLE: Revised Range Management Program for the Challis Planning Unit Applicant: Department of Interior
TYPE FUNDS: ___Grant ___Loan ___State Block ___State Appropriation ___State Funds Only	SOURCE OF FUNDS REQUESTED Federal Agency: Dept. of Interior Federal Program Title: Grazing Preference Federal Catalog No.: 15206 State Agency: Funds Requested: $_____Federal $_____State

REVIEW RESULTS

___The Application is supported.

___The Application is not in conflict with State, Areawide, or Local plans.

___Comments are attached for submission with this application.

_X_The Application has no preview requirements. Thank you, however, for providing this courtesy information.

You may now submit your Application package, MIS-5, and review comments to the Federal or State Agency(s) from whom action is being requested.

Please notify the State Clearinghouse of any changes in this project. Refer to the SAI number on ALL correspondence pertaining to this project.

T/A & Research

Anita Chinsky, for
State Planning Director

(11)

UNITED STATES
DEPARTMENT OF THE INTERIOR
HERITAGE CONSERVATION AND RECREATION SERVICE
NORTHWEST REGION
915 SECOND AVENUE, RM. 990
SEATTLE, WASHINGTON 98174

IN REPLY REFER TO
ER-7

SEP 22 1978

Memorandum

To: Idaho State Director, Bureau of Land Management

From: Regional Director, Northwest Region, Heritage Conservation and Recreation Service

Subject: Review of Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit

We have reviewed the subject DES and are sending you our comments as requested in your recent memorandum.

GENERAL COMMENTS

Impacts of the proposed action on recreation will primarily take place from range improvements and revegetation projects. The final statement should provide additional information on these impacts and also on conformance with 36 CFR procedures regarding cultural properties.

DETAILED COMMENTS

Page 1-8. Table 1-4 lists various proposed vegetation treatment measures under the heading "Recreation (Visual Resources)." The relationship of these measures to, and their impact on, recreation and visual resources is not clear and should be explained in the FES.

Page 1-10, first full paragraph. The last sentence speaks of 1,110 acres in three allotments that will be provided for urban, suburban, industrial and agricultural development. Conversation with the Area Manager indicates this would comprise a separate action which would require a separate DES. We suggest the FES contain a statement to this effect, plus an explanation of the action and how it would relate to the range management plan.

Page 2-37. The DES discusses deterioration of spawning and rearing habitat for trout and salmon. The final statement should elaborate on this discussion in relation to previous impacts from grazing.

Pages 2-53, 3-39. According to the DES, implementation of the proposed grazing reductions could lead to accelerated sale of private land for recreational subdivisions. The FES should discuss impacts of increased numbers of seasonal and permanent area residents on recreation use of the planning unit and also of nearby major recreation attractions, including the Stanley Basin and the Sawtooth National Recreation Area.

Page 2-58. The description of recreation resources and use is very brief and should be expanded in the final statement. The discussion should include activities and resources in addition to hunting and fishing, description and location of recreation areas and facilities, recreation trends, potentials for recreation, and any conflicts that exist or may develop.

Pages 2-58 through 2-61. There is no indication that the Agency has consulted with the State Historic Preservation Officer (SHPO) to identify cultural properties eligible for inclusion in the National Register, in compliance with 36 CFR 800. The FES should specifically reflect previous and planned conformance with 36 CFR 800 procedures and should document consultation with the SHPO.

Pages 2-59, 2-62. The final statement should discuss how range improvements, revegetation projects, and other changes will be avoided in the areas that may be identified for wilderness study.

Page 3-44. The section on recreation impacts contains only a statement that there will be no significant impacts to the recreation resources. The FES should describe the nature and extent of impacts from proposed range improvements and revegetation on esthetic values, use of recreation areas and facilities, special interest areas, and other recreation concerns.

Maurice H. Lundy
Regional Director

(12)

State BLM. Dirc.
Concering the Challis supplemental environment statement. I would like to make the falling comments.

1. In the last year 3 people out of 200 million U.S. citizans contacted the Salmon BLM office concering the Challis wild horses.
2. Over 80 per cent of Custer Co. total income is generated by the livstock industry.
3. Over 75 per cent of people using this aera for recreation come from Idaho & Utah. The rest come mainly from Western States.
4. If the engery problem worsens in the U.S., people may be unable to visit this aera without great expense.
5. Cattle have used this aera for over 100 years with out major harm. With the Challis ranches sub-divided the amount of people would change the land beyond ever getting it into its natural State agin.
6. To send these comments I had to call the Salmon office and speak to three different people to get the address. There were no address in the local papers or in poplic.
7. I think most of your comments come from special intrest groups and not the general Poblic. Thankyou

Joe Caywood
Tendoy Idaho

(13)

OFFICE OF THE DIRECTOR

United States Department of the Interior

BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

DATE 9-27-78
SHEET 1 OF 1 PAGE

September 27, 1978

Memorandum

To: State Director, Bureau of Land Management, Boise, Idaho

From: Chief, Office of Environmental Coordination, Bureau of Mines

Subject: Draft supplemental environmental statement for a revised range management program for Challis Planning Unit, Bureau of Land Management, Custer County, Idaho

If under existing law the establishment of grazing districts does not restrict the right of entry for mineral exploration and development, there should be no impact on hard rock minerals from implementation of this program. We believe, however, that long-term range management planning could be improved if possible mineral development were taken into account. This would be difficult at best, but identifying known mineral resources in plans such as this would give planners some idea of areas of potential surface use conflicts such as may happen in the Bruno Creek allotment.

The Bureau of Mines Mineral Industry Location System (MILS) files contain information on known mineral occurrences, prospects, and mines. In the Challis unit, prospects have been examined for fluorspar, mercury, molybdenum, magnesium, tungsten, gold, silver, copper, lead, and zinc. Production has come from sand and gravel, silver, and tungsten operations.

We would like to be of assistance in this regard. Mr. Richard Appling, Chief of our Western Field Operation Center, 315 East Montgomery Street, Spokane, Washington 99207 could provide further information.

We appreciate the opportunity to review this statement.

Chief, Office of Environmental Coordinat:

W.L. Dare

WOLUTION.

2001 E STREET, NW.
WASHINGTON, D.C. 20241

DATE SHEET ... PAGES.

September 27, 1978

Memorandum

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Subject: Draft supplemental environmental statement for a revised range management program for Challis Planning Unit, Bureau of Land Management, Custer County, Idaho

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Chief, Office of Environmental Coordinat:

W.L. Dare

OFFICE	INITIAL	DATE
S.D.		
A. Dir.		
PLANNING		
PUBLIC AFF.		
T P O		
RESOURCES		

POLLUTION

Sept 22, 1978
Salmon, Idaho (14)

State Director, Bureau of Land Management
Federal Building
Box 042
Boise, Idaho 83724

Dear Sirs.

I'm writing in regard to the Range management program for the Challis Planning Unit.

I believe the Continuation of the present Active A.U.Ms for Cattle grazing and the elimination of Welfare leases on public land.

All humanity depends on food for life and the gov. does not have moral right to not manage in the best interest of the General public and human need of food.

No ranch should receive more than 450 A.U.Ms per year. Ranches need this public grazing welfare assistance benefit dole to stay in operation, Human need should have first Consideration in action.

Please give this your consideration and act with Compassion for these people and equal rights for all who live in this Challis Planning Unit and Complete Beef County Controll of A.U.Ms.

Sincerely Yours

Bill Mapwell
Salmon
Idaho 83469

SEP 27 1978
Department of the Interior
Bureau of Land Management
Idaho State Office
Boise, Idaho

P.S.- I'm inclosing my report and the General public has a right to expect you to act on the sincere interests of public trust for General public

Subject of Report-

Public welfare grazing assistance benefit dole.

There are two public policies used for guidelines in the management of allocation of public welfare grazing benefit dole.

Policy I.

1. Sincere good character &Public trust, and human rights.
2. Intelligent wisdom
3. Law and order based on the following principles.
   1. Christianity.
   2. Constitution of the U.S.A.
   3. Declaration of Independance.
   4. The principles of democracy.
   5. Pledge of allegiance to the flag.
   6. Bill of Rights.
   7. Civil Rights.

Policy 2.

1. Evil character mistrust.
2. Complete irresponsible ignorance.
3. Complete lawlessness based on the following principles.
   1. Atheism and Organized Crime.
   2. Primitive uncivilized law of the jungle where the big animales tramp through the jungle destroying the little animals that don get out of their way.
   3. Their code of ethics are based on big me little you huray for me and distruction to you or every thing for me and nothing for you, and in complete violation and contempt of law and order.

The U.S. Forest service and B.L.M. use policy number 2 for guidelines.

Public Land Law Review Commission, Sent identical letters to- The president of the senate and the speaker of the house of representatives. on June,20,1970, the last paragraph reads as follows-

"The Commission's recommendations will support early implementation through Executive and legislative action to assure equitable treatment of our citizens and make the public land laws of the United States and their administration simpler, more effective,and,in accordance with the criterion of the policy objective set forth in the Commission's Organic Act, truly for the maximum benefit for the general public" Respectfully, signed by 19 Commission Members.

"Delayed justice is injustice!"

In the Declaration of Independence is the following statement-

"We hold these truthes to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, That whenever any Form of Government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness."

There is no Happiness in Poverty, Tyranny, and Oppression, forced on the gene al public by the Federal Government. or being a slave to atheism.

In the Gettysburg Address is the following statement-

"That from these honored dead we take increased devotion to that cause for which they here gave the last full measure of devotion; that we here highly resolve that these dead shall not have died in vain; that this nation , under God, shall have a new birth of freedom, and that government of the people, by the people, and for the people,shall not perish from the earth."

The U.S Forest service and B.L.M. are in violation and contempt of the above statements in the allocation of public welfare grazing assistance dole.

Public Land Grazing Assistance Benefit Dole

The U.S. Forest service and B.L.M. pledge of allegiance to the flag used for guide lines based on their public policy for allocation of public welfare grazing assistance benefit dole on public land is as follows.

I pldge allegiance to the flag of the United States of America and to the Aristocracy for which it stands, one nation under Atheism, indivisible with anarchy, subversion, treason, selfishiness, greed, lust, bigotry, tyranny, exploitation, manipulation, corruption, malice, oppression, discrimination, hate, arogance, fraud, hypocrisy, and cruel unjust inhuman inequities to all.

The U.S. Forest service and B.L.M. uses the power of public office and public money for the following unjust acts.

1. Conspiracy to obstruct humane justice and public benefit to the needy.
2. Fraud, Hypocrisy, and Corruption.
3. Complete irresponsable concern for humane need.
4. Dishonor and Disgrace the symbol of the U.S.flag.
5. Betrayal of public trust and credibility of government code of honor.
6. Forcing the Aristocracy and the Caste system of gov. on the U.S. public.
7. Forcing economic poverity, agony, futility, despair on the small needy ranch operators, also the dishonor, disgrace, and indignity of being a slave.

Federal public servants in violation and in contempt of the following principles.

1. Christianity.
2. Constitution of the U.S.A.
3. Declaration of Independance.
4. The principles of democracy, and human rights.
5. Sincere good character, responsive concern, and compassion for needy.
6. General health and welfare of the public and humane social justice.
7. Law and order.
8. Bill of Rights and civil rights.

I recomend the guidelines for public welfare grazing assistance benefit dole as follows.

1. Each Co. have a local board for all public grazing assistance control of allotment dole, the board members must be free of conflict of intrest.
2. Each Co. board have control of size and distributation of allotments on all public land, and when a ranch is sold, inherited , or the operation changes in any way the public grazing assistance benefit dole would go through the local control board for review.
3. Bona fied ranch operations are required.
4. Humane economic need have first priority.
5. Ranches located closest to the public grazing should have next priority.
6. No out of state, out of area, out of Co., or Foreign land or ranch oweners should receive any public welfare grazing dole when the local ranch operators are in economic need of this public benefit.
7. No bona fide small ranch would ever be denied their fair equal share of public welfare grazing benefit dole.
8. No one ranch operation would receive more than 450 total aums. rural lands guidelines for one year till all ranches in economic need in the county are taken care of to prevent poverity, in the family, Co., and state.
9. Better control of cattle on moving cattle over private property to and from public range, get all cattle or livestock off public range within 5 days of the end of the grazing seasor.
10. Compensation for damage to private property done by range cattle, ranchers should receive compensation for half cost of the up keep of the fences between their private land and federal land.

Bill Mafwell
Box 1016
Salmon, Idaho 83467

Never in the history of the U.S. armed forces have they ever came in contact or faught aginst a enemy with more desire and determination to violate, show contempt and destroy the sincere principle cause of the Constitution of the U.S., the Declaration of Independence, the ledge of allegiance to the flag, Christianity, Democracy, and humane justice under the American flag.

The federal government wouldnot dare treat animals put in their care with such cruel inhuman injustice as the federal gov. public servents treat the small needy rancher, by stealing the fair share of the needy's public grazing assistance dole and give it to the big operator to try and satisfy their greed.

The U.S. Forest Service and B.L.M. follows the uncivilized law of the jungle for their code of ethics as follows big me, little you, hurray for me, and to hell with you, With no concern for humane need, or human rights.

The Forest Service and B.L.M. uses the power of public office and public money to force small ranch operators into poverty and distruction by de riving them of their fair equal share of welfare grazing assistance dole benefit because the small operators have neither the money or the political power to force the federal gov. to give them humane justice, fair equal rights, equal oppertunity, and equal treatment in the allocation of public welfare grazing.

Bill Mafwell
Box 1016
Salmon, Idaho

I (15)

Clayton, Idaho
East Fork of the Salmon
9-26-1978 River

Bill Mathews
State B. L. M. Director

Dear Mr. Mathews,

The following are our comments concerning the draft supplement to the E. I. S.:

Here we are two years later, three environmental impact statements + hundreds of thousands of dollars of the taxpayers money wasted, + the ranchers are in a worse predicament now than we were in the beginning. The main objective of all this was to do away with grazing + when the B. L. M. came up with the Suitability Criteria, you got the job done fast. In this mountainous area, it is practically all a 50% slope or more. On page 2-7, table 2-5 it states East Fork Allotment; 2,520 acres upward trend, 6,786 acres static trend + 2,464 acres in Douglas fir, brush + rock. There is no downward trend, yet you are cutting our numbers 62%. This ridiculous Suitability Criteria is causing our cut in numbers + we can't stand for it. We feel that removing 50 to 70% of the plants for sage, watershed + wildlife, that is no Carrol

II

to stack the steepness of slopes + distance to water on us.

We run 199 cattle on B.L.M. from May 16 - June 11. Then move them on the Forest Service. Our cattle are only on B.L.M. three weeks. This is very essential to our operations; there is no way we can operate without it. With the Suitability Criteria our numbers would be cut down to 98 head. The B.L.M. with this Criteria is forcing us out of business. We will be forced to sell our ranch to a subdivision, as there would be no market for it as a cattle ranch with no B.L.M. Permit. It will mean the end of the Mtn. sheep, as they cannot with-stand the adverse impact the increased numbers of people + their dogs would have on them.

The B.L.M. states in all their E.I.S.'s that the Mtn. sheep winter range is in poor condition, this is not true. Their winter range is in very good condition. When you can walk through grass half-way to your knees in canyon after canyon, there is no way that range is in poor condition. With some improvements it would be excellent. I believe Mr Peck + some of the B.L.M. personnel

III

from the Salmon Office will verify this. There hasn't been any cattle on this range for two years + were very few the years before. We gave up the three canyons below our house voluntarily for the Mtn. sheep's winter range. The B.L.M. said, "This would be taken into consideration", but it wasn't. I believe you people had better be more concerned about their summer range. With the thousands of people + their dogs in the Boulder Country + White Clouds Area + more people coming every year. The Mtn. sheep have no place to graze up there for people + dogs. They have already lost the Mtn. goats out of that area, but I doubt if the Mtn. sheep will change territory so will have to die for the back-packers + their dogs.

Wild horses + people are the only ones on the B.L.M. that are not controlled. The B.L.M. is cutting cattle numbers from 20% to 100% in the Challis Unit, yet wild horses are allowed to increase 20% annually + graze the year long. This is not fair to the ranchers. The wild horses are causing the detrimental effects to the range, not the cattle.

It is sure disheartening + disgusting after all our hard work, meetings,

IV

workshops, comments, telephone calls + field trips that none of it was Considered or mentioned in the E.I.S. The B.L.M. went ahead + printed the supplement to the E.I.S. just as you had planned. The cut in numbers, the biological limits of plants, the suitability Criteria + etc. You people never listened to a thing we had to say.

It is a sad day for the United States when our heads of government, let an environmental Sec. of Interior, an environmental judge + a bunch of rich radical environmentalists run our country. They are letting them lock up all our natural resources + turn our area into a playground. By stopping grazing, mining + logging, they are putting all of us out of business.

Are all our heads of government so blind with wealth + power that they can't see by putting all the ranchers, miners + loggers in the West out of business that they are weakening our government + in turn we will be falling into the hands of the Communists?

Sincerely,
Betty + Dick Baker

(16)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 443

SEP 26 1978

Mr. Larry L. Woodard
Acting State Director
Bureau of Land Management
Federal Building, Box 042
550 W. Fort Street
Boise, ID 83724

Dear Mr. Woodard:

We have completed our review of your Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit.

From the standpoint of the Environmental Protection Agency's areas of concern and expertise, we are rating this statement LO-1 (LO - Lack of Objections; 1 - Adequate Information). This rating will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act, as amended.

We appreciate the opportunity to review this draft supplemental environmental statement.

Sincerely,

Alexandra B. Smith

Alexandra B. Smith, Chief
Environmental Evaluation Branch

(17)

United States Department of the Interior

BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
FEDERAL BUILDING & U.S. COURTHOUSE
BOX 043-550 WEST FORT STREET
BOISE, IDAHO 83724

IN REPLY REFER TO: 160
706.

SEP 29 1978

SEP 29 1978
Bureau of Land Management
Idaho State Office
Boise, Idaho

Memorandum

To: State Director, Bureau of Land Management, Boise, Idaho

From: Regional Director, Bureau of Reclamation, Boise, Idaho

Subject: Draft Supplement Environmental Statement on a Revised Range Management Program for the Challis Grazing Unit, Idaho (DES 78-32) (Your memorandum of September 6, 1978)

We have reviewed the subject supplemental EIS and have no objections to the content of the document.

Thank you for the opportunity for review.

For the Regional Director

Regional Environmental Officer

cc: Commissioner, Attention Code 150
Director, Office of Environmental Project Review

(18)

September 25, 1978
Challis Idaho

State Director
B.L.M.
Federal Building, 550 W. Fort St.
Boise, Idaho 83724

SEP 29 1978
Bureau of Land Management
Idaho State Office
Boise, Idaho

Sirs:

The rancher can not afford these proposed cuts in grazing. We feel that the ranches can manage things by himself. Our livelyhood is at stake and we certainly feel the cuts arent nessecary!

Ellen Hansen

(19)

SEP 29 1978
U.S. Department of the Interior
Bureau of Land Management
Idaho State Office
Boise, Idaho

Clayton, Ida.
Sept. 26, 1978

Director of Bureau of Land Management
State of Idaho,
Mr. Bill Mathews

I understand the permittees of the Challis grazing unit are supposed to write you a letter in response to your E.I.S.

I would imagine from your position as State Director you have some knowledge of livestock and grazing, even though most of your so called specialists dont know a cow from a wild horse.

All you hear any more from our so called president is "Lets stop Goverment spending" in the next breath he allows his officials to start another program such as this one.

Even this wouldnt be so bad if you had used competent help.

Along with the reductions you are proposing, incedently I am one of those who was slated for a 100 percent cut, on your first release. You are also demanding something that is impossible to live with in this country, your so called Suitability Criteria.

There is no way in the world this ruling can sucessfully be applied to any grazing unit in this district. If you insist on this ruling why dont you send to Russia, Have a Battalion of troops in to the Challis Planning Unit and do it up right.

Respectfully Yours

Dan Woolley
Clayton, Idaho

(20)

Sept. 26, 1978

William L. Mathews
State Director
B.L.M. Boise Idaho

Dear Mr. Mathews

I am very upset as are other ranchers. According to your calculations or whatever, cattle can't graze on steep slopes because it is too far for them to walk to water. Now really, do you expect cattlemen to believe that?

Have you ever had to ride to check cattle or maybe you don't know what a cow is. Well I've had to ride to check our cattle and believe me those cows can and will graze on steep slopes and be well over a mile from the nearest water, not just 03 miles or less as you put it.

For ranchers who depend on grazing government land and particularly in this area, have to go by this so called suitability criteria there is no way they can stay in business. And if these ranchers sell the cattle they put on range, all that beef will flood the market and the already "poor" ranchers will get even less money. Then that beef is devoured and gone who will supply the beef the people like to eat? Is this purpose of it all for the government to make all the population welfare recipients? Then will be a lot of sore that will go down fighting for what we feel is right.

Maybe when the beef are gone, they are already an "endangered species" these dudes will start killing and eating all the wild horses and burros.

We sure do not need this suitability criteria or any cuts on our grazing allotments.

Sincerely
Riggs Sherwood
Archie Sherwood
B.L.M. Permittee
Salmon District

(21)

September 26, 1978

Bill Mathews
550 W. Fort Street
Box 042
Boise, Idaho 83724

Dear Mr. Mathews:

In reading through the E.I.S. we are wondering if there is any scientific reasoning behind the suitability criteria, which involves slope and distance to water or did the memo in the appendix prompt this decision. In the type of country we have in this area cattle do graze slopes much greater than 26°.

For every 100 lbs. of forage produced on the range the proposed action reserves 70% for biological limits of the plant then in addition the proposed action reserves 23 lbs. for the suitability criteria leaving 7 lbs. out of every 100 lbs. to be used. Shouldn't the 70% for the biological limits of the plant be sufficient to maintain the plant, leave ground cover, and litter accumulation without adding the suitability criteria to this?

The economic studies used in the E.I.S. do not reflect the ranchers payment for his land. It only shows $400/year for land rent. This figure could be true if the land is paid for but in most cases the land is not paid for so this $400 figure is not realistic. The ecomonic study does not show any interest. Most every rancher borrows money toope_ate on during the year and the interest is around 8-9% and this is not shown at all in the economic study.

The proposed action would keep cattle on private ground longer decreasing hay production this would require ranchers to buy more hay thus increasing our financial losses of the last four years.

The economic study states 1/3 of the ranchers work 1/2 the time off the ranch but we would like to point out these ranchers only account for 9% of the total AUM'S which is a very small percentage.

The E.I.S. is inconsistant for example 36 ranchers cuts range from 20%-74% but one allotment has a 0% cut. Why isn't this range cut when the apparent range trend is on the decrease as shown in tables 3-15 and table 8-3.

Table 1-6 shows Road Creek big horn sheep numbers as 30, Spud Creek big horn sheep numbers as 25, and the East Fork big horn sheep numbers as 85. This showing a 140 head total for the big horn sheep in the East Fork drainage which is toohigh. The figure 85 head is closer to the exact number of sheep in the drainage. They do go into the Road Creek and Spud Creek areas but they are the same sheep.

We don't believe the Salmon BLM personal support this proposed action as the proper way to manage the range.

We suggest you do away with the suitability criteria but if you are going to use the suitability criteria we suggest you change the percent slope to degrees slope. For example, 50% slope would be changed to 50° slope.

Sincerely,

Gary Ingram
Jodene Ingram

(22)

Idaho Archaeological Society, Inc.

P. O. BOX 7532 / BOISE, IDAHO 83707

September 28, 1978

Mr. William L. Mathews, State Director
Bureau of Land Management, Federal Bldg.
550 West Fort Street - Box 042
Boise, Idaho 83724

Dear Mr. Mathews:

We have received the draft supplemental environmental statement on a revised range management program for the Challis Grazing Unit. We appreciate the concern expressed for the possible preservation of pre-historic and historic cultural resources. However, in reviewing the proposal as submitted, there are several questions that we feel should receive additional consideration.

1. The monitoring program as explained in Chapter 1, page 18 and 19 is very vague. The actions that you would take to correct adverse impacts occuring to specific cultural resources is very broad. We feel that this program should be more detailed.
2. The proposal to adopt in three years, a cultural resource management activity plan, is a rather long period of time. A number of cultural resource areas could possibly be destroyed before the plan was put into effect. This destruction would be the result of natural erosion, animals, and humans--particularly human beings.
3. The Idaho Archaeological Society's main concern is the protection of existing cultural sites. We are very concerned about the continued destruction of the these sites on public lands by so-called "pot hunters". Consequently the main question is, will the Bureau of Land Management aid in policing these areas and also will they then inforce the existing laws prohibiting such activities?
4. Nowhere in the entire report was there any mention of the possible continued cooperation of a funding program with the private sector for future scientific archaeological research projects. Will this past cooperation continue?

Thank you very much for providing the opportunity to review and comment on this proposal.

Sincerely,

John H. Schaertl

John H. Schaertl, Pres.

cc. James McClure, U.S. Senator
ce. George Hanson, Rep. 2nd District
ce. Tom Green, Idaho State Archaeologist
ce. Richard Harrison, State Archaeologist, B.M.
ec. Dr. Max Pavesic, Boise State University

(23)

September 23, 1978

I am writing again to voice my concern over the Challis E.I.S. This is the worst example of misconcepts and unfair treatment I have seen.

The range cuts proposed are very unfair, permitees with the best range and most number of non use are getting hurt more than the ones on the worst range with no non use. We were told by the BLM 3 years ago that the cuts if they came would be on total AUMs, Now we are told that if you have non use, you will lose all of it and the cut will be taken of what you are presently using. Does this seem fair?

This area in custer county has some of the best BLM for livestock grazing anywhere. With better management and cooperation with the permitee's there should not have to be any cut of the number of livestock in these allotments. In the EIS you state the distance a cow can go to water, and what slope is suitable for livestock, did it ever occur to you that a cow will travel miles to water, (in Nevada as far as 12 to 15 miles, most ranchers in those areas never sell their old cows they leave them to teach the younger stock where the water holes are) and that most cows will travel around a hill not straight up. I do not know who developed the suitability criteria for the Challis EIS, but I object to it 100 %., I know that unless the suitability criteria is changes I will no longer be in the cattle business within the next year or so.

I am a firm believer that if the Idaho STate Fish and Game and the BLM keep going at the rate they are, we will have no wild Game and the no cattle range in the near future. I truly hope that the powers that be will open their eyes and say lets get the BLM and the Ranchers together and lets improve water where need be and lets get into a rest rotation in areas that need it and get some reseeding going, Taking all the cattle off the range is not a solution it is a seeout. and the ones selling out will be the people in the Challis Allotment who will no longer be able to be in the Cattle business.

Please reconsider the EIS. We are in Custer County and The ranching business because it is our home and our life.

Thank you

Doyle Leuzinger
Challis, Idaho 83226

(24)

Sept. 25, 1978

Mr. William Mathews
State BLM Director
P.O.Box 042
Boise, Id. 83724

Dear Mr. Mathews:

In reviewing the Draft Supplement for the Challis Planning Unit, one can mention dozens of points of lesser importance, some of which we've attached to this letter, but what is of major importance is an answer to the question, "Is the proposed action, or any of the alternatives, the correct action? "

Our answer is an emphatic NO. Those most directly affected by it cannot live with it and the long term effect on our environment will be more determental than beneficial. The proposed action contends that by cutting grazing by 48% from present use it will solve most ptoblems whether those problems are real or only imagined.

We feel that a double stacked unrealistic combination of criteria was used to calculate AUMS available for forage. After collecting field data on soil capability, range conditions and trend, and forage clippings, the BLM arrived at a figure of AUMS available. At this point the BLM imposed a "Biological Limits of Plants Criteria." This criteria theorizes that 70% of the spring forage, when most of our BLM lands are used, must be reserved for plant maintenance and watershed. (60%summer, 50% fall and 70% if season long) That leaves 30% for consumption. Next the BLM by directive from Washington decreed that a "Suitability Criteria" be enforced. This concerns steepness of slope and distance to water. Examples: No AUMS counted if slope is over 26.5 degrees. No AUMS counted if slope is over 11 degrees and water is more than .6 mile. This Suitability Criteria cut our AUMS in fourth so that we were down to about 7% useable AUMS. The district office modified this to 16% and have been criticised from Washington for doing so.

Any person or group of persons who would attempt to support such a combination of restrictive proceedures should have their professional abilities and intentions closely questioned. Who dictated such a proceedure? Our local District Office at Salmon says Washington gave the orders. Repeated inquires have failed to locate who is responsible for such decisions. Does Washington know or care about the end results of their theories and how far from reality they are? After spending unimaginable amounts of money and manhours of professional people's time, surely someone should be held accountable.

Professional management is a careful weighing and consideration of all factors. Just a few of the factors not fully considered in this supplement are:

1. Examples of proven and successful management systems in operation near Challis which took little or no grazing cuts to implement were not considered.

2. Reserving 50-70% of the forage for "Biological Limits of Plants" should also be able to serve the purpose of protecting steep slopes and allow for distance to water. National Director Frank Gregg agreed with this when he visited Challis. Bill Meiner, NRDC, at the Boise hearing stated that there appeared to be an overlaping of criteria. The Forest Service considers steepness of slope and distance to water but they do not use it as a criteria for taking cattle off the range. They use it more realistically as a guide to show where improvements or good management practices are needed.

3. Present use is not considered. Livestock presently use twice the AUMS proposed in the supplement, wild horses presently use five times the proposed use. Pounds of beef produced per AUM have risen steadily. Our ranch has increased weaning weights by 32 pounds and increased pregnancy rates by 6⅔% during the past five years. Wild horse numbers have doubled every three years. These facts do not support the 48% reduction in cattle numbers as proposed.

4. Economic impact on individual ranchers and on the community was not given due consideration.

5. The cost of beef will be raised as a result of the nationwide move to reduce grazing on public lands.

6. Intense cloudburst activity creates most of our sediment. This can be seen on the ground here in many locations where livestock do not even graze. Removal of all livestock would not solve this problem.

7. Our ranches are a valuable asset to the public lands. We provide a buffer zone for wildlife and fish as well as providing forage for wildlife. Reductions in grazing is one step closer to subdivision of ranches. Large corporations and foreign investors are an increasingly prevalent buyer of American land. We'd prefer to see the family rancher stay. Subdivision will have an even greater adverse impact on our environment than any amount of cattle grazing.

8. Wild Horse populations have doubled every three years while cattle numbers have been controlled and yet you are asking ranchers to take 50% cuts to pay the price for uncontrolled wild horse numbers. Someone needs to be held more accountable for horse management. Judge Ritchie should be directed to review the results of his decisions. We cannot wait for EIS completion to gather wild horses.

9. Who decides what "Maximum Public Benefit" is? Our nation has put pleasure before production for too long a time. It is time

we reversed this trend before we end up with so many crises that we con't function as a free nation.

10. Close cooperation with all parties involved is needed. Permittees feel that their input has been disregarded and many do not now attend meetings nor voice an opinion because of a feeling of futility. Other interested parties and land management agencies in the unit feel they were not consulted.

11. It is obvious to even a fifth grader that a section of land in the mountains contains more surface area than a section of flat land. This increased surface area therefore grows more forage. The BLM quickly reduced our AUMS because of the "Suitability Criteria" which involves steepness of slope but yet they refused to use this same data to increase pounds of forage available due to more surface area available for plant growth.. Reasons given were that the cost of doing such would be astronomical, they did not have the time and that laws would have to be changed regarding the legal way to survey land. These reasons do not hold water.. Land on a 40degree slope will contain 30% more surface area than flat land. Even we nonprofessional people could manage to do that calculating given the data that was compiled to reduce AUMS because of steepness of slope.

We think the Challis permittees should demand that the BLM to the following:
1. Spend their time and effort in ;working out a cooperative effort to arrive at an acceptable management system.
2. Retain present licensed use, implement improvements and reduce wild horses to 150.

Our incoming Tri-County Cattlemen's President, Grant Daniels said that in the Challis Planning Unit we have ranching families who have carved their ranches out of the rocks to become tax-paying and productive units. They have had to be compatible with nature to survive. It hardly seems right that Washington can be so pressured by outside interest groups that they now think they can step in with new theoretical rules and arbitrarily decide a devastating course of action on the locality.

Sincerely,

Mr. & Mrs. Will Ingram
and family

(25)

Challis, Idaho
Sept. 27, 1978

Director Bureau of Land Management
Boise, Idaho

Dear Sir:

The Suitability Criteria that has been used for determining range carrying capacities is one of the most unrealistic data that has been used on the EIS Statement. It has been compounded by the biological limits and water shed use. There is no way that all of these should be considered separately.

As for my own allotments - the Red Lake Unit - it was cut in half when they took out the Trail Lands of Malm Gulch. At that time the Salmon District manager and personnel agreed that no cut would be necessary. The grass was there but water was a problem and they would develop it if we would agree to keep the cows off the trail lands. This water has never been developed and a change of District managers left this matter a thing that was not binding to him as it was before. The contract with the BLM was not fullfilled on their part.

The injunction on the wild horses has turned them loose to multiply to a point where there has been extreme damage to parts of the range. This has not been caused by over grazing by cows. It is the fault of the management to allow this to happen. Under no circumstances should this have been allowed.

* The total problem has been that the management has listened to minority groups and not enough attention paid to managing the land.

On a whole the entire EIS is based on assumption from studies not from practical economic facts!

The whole EIS has not included any input from local people!

***The EIS should not be used until it has had more than half the input from people in the local community, permittees, businesses etc. ***

Sincerely,
Garth Chivers

(26)

Sept. 21, 1978

To whom it may concern:

We have traveled to Idaho ten years now and we come from Michigan to enjoy your mountains and valleys. Things that we don't have back home. It would be a great disappointment to come here to see cities.

What about your ranchers? Are you trying to put them out of business? You would think that the government would want to take care and give a helping hand to Ranchers and Farmers of America the land of the free why should we spend dollars to import when we have our own here. Also these Ranchers are paying rent to use Government land if they go broke going to pay for your Private Park? More and more taxes. Ranchers and Farmers are our life.

We have had many good times here, and have met many fine people I would hate not to come back because roads are closed to us. We are not hikers or experienced horse back riders, we depend upon roads to drive on and perhaps a little walking. This year we have brought my mother with us to see your State, no way could she pack gear on her back or ride a horse.

I hope next year when we come again in which we are planning we still find things like they are today.

We have an Automotive Machine Shop back East and thought about moving it out here in this area. But with the closing?

roads that means mining and logging will be out of business. Also grazing would go south when the Kanab is involved. Be sort of business. That sort of gives us second thoughts of moving out here.

Yours truly,
Mr. & Mrs. William Elliott
2024 Cabo Grove Rd
Howell, Mi. 48843

(27)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
4620 Overland Rd., Rm. 209
Boise, Idaho 83705

September 29, 1978

TO: State Director, BLM, Boise

FROM: Field Supervisor, ES, Boise

SUBJECT: Draft supplement environmental statement on revised range management program for the Challis Grazing Unit, Idaho (EC 78/34)

We believe that the subject document adequately presents the impacts of the proposed action on fish and wildlife resources.

Richard J. Fisher
Richard J. Fisher

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

(28)

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Grandview

VICE PRESIDENT
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Caldwell
Stanley Terrell
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Moscow
William Jungert
Cottonwood

Idaho Farm Bureau Federation

AGRICULTURE THE BASIC INDUSTRY

September 28, 1978

Mr. William Mathews, Director
Bureau of Land Management
Department of Interior
Idaho State Office
500 West Fort
Boise, Idaho 83724

Re: Challis EIS

Dear Mr. Mathews:

The Idaho Farm Bureau is a non-profit farm organization made up of 39 county Farm Bureaus with a total membership of a little over 21,000 family members.

The following is an analysis of the Draft Supplemental Environmental Statement For The Challis Planning Unit.

PROPOSED ACTION:

1. This reduction in cattle AUMs seems unnecessary in light of the AMPs for the Herd Creek and Morgan Creek allotments being designed and implemented without reductions.

2. The reduction of the wild horse numbers to 162 head would be a big step in the right direction but could ideally be reduced even further.

3. These wildlife and forage projections are probably realistic but the EIS treats them as though they have immediate impact rather than a slowly increasing impact over the next fifteen years.

4. It's doubtful that complete elimination of livestock grazing is necessary on these areas to afford them the protection they deserve.

BRANCH OFFICE: 500 WASHINGTON STREET . P.O. BOX 167 . BOISE, IDAHO 83701 . (208) 342-2688

5. Fencing of stream banks should only be done when absolutely necessary.

6. Much more could be accomplished if less were spent on EISs and more were spent on the ground improvements. Over $144.00/AUM has already been spent on Challis Unit, atleast three times the value of an AUM for that area.

COMPONENTS OF PROPOSED ACTION:

Standard Operating Procedures:
It is imperative that SOP be followed in a manner not to greatly increase costs and avoid undue delays in AMP implementation.
How do you resolve the conflict between number 8 and 13 of SOP?

Interrelationships:
Interdependence of lands
BLM has not cooperated with other agencies, except the Idaho Fish and Game Department, as required under Section 102D of the Environmental Protection Act.

The amount of grazing by wildlife on private lands within the unit, especially by deer and antelope, has not been taken into consideration.

ASSUMPTIONS AND ANALYSIS GUIDELINES:

2. There should be no need for further environmental analysis.

5. Herd Creek and Morgan Creek are two examples of cooperative AMPs that were developed without cattle grazing reductions. The BLM chooses to ignore these examples.

ALTERNATIVES:

Alternative One - unrealistic because continuation of present management is construed to mean freezing of everything in its present state. This ignores the fact that all existing improvements listed on Page 1-22 were developed under present management and that land use planning and range improvements could continue under present management. Present management doesn't have to mean no management.

Alternative Two - This alternative is totally unacceptable as it would virtually bring an end to the livestock industry in the Challis area and erode the whole economic base of the community.

Alternative Three - This alternative is somewhat more reasonable than the proposed action but is still unacceptable. The unnecessary socio-economic hardship it would place on the affected ranchers and the community outweigh the relatively minor increases in environmental quality that would be experienced.

At this time I would like to note an interesting paradox that stands out in the discussions on the effects of grazing on vegetation.

It is stated in this alternative that the following adverse impacts would occur on vegetation:

1. Decreased vigor
2. Decreased seed production
3. Decreased seedling establishment
4. Decreased litter accumulation

Yet it is a known phenomenon (and stated on pg 3-3 of Chapter 3) that proper grazing actually increases the vigor and quality of the vegetation and increases seedling establishment. Also seed production is not adversely affected and litter accumulation is satisfactory under proper grazing management.

Thus it is hard for me to understand how one action can have two completely opposite effects at the same time. (Also refer to Table 3-2, pg 3-5 of Chapter 3)

Alternative Four - Since wildlife numbers would not increase and quality of habitat would not improve dramatically, the adverse socio-economic impacts far outweigh the beneficial impacts.

Alternative Five - This alternative is completely unacceptable as it is obvious, and becoming widely accepted, that the large number of wild horses in the unit is largely responsible for the deterioration of the range condition in areas they inhabit. Even at the 340 head rate, significant localized deterioration would take place, and the adverse socio-economic impact of the cattle grazing reductions would outweigh the esthetic values.

Alternative Six - The adverse socio-economic impacts of this alternative would not be justified in light of the relatively minor improvements in environmental quality.

It is interesting that the BLM chose to ignore one of the most obvious management alternatives.

The objectives of this 7th alternative could be as follows:

1. Maintain current livestock stocking rate
2. Reduce wild horse numbers to a minimum level required to maintain healthy, viable herd
3. Increase big game heads over a 15 year period to 317 elk during the winter and spring
   5,624 mule deer during the winter and spring
   1,160 antelope in the winter and 906 antelope in the spring, summer and fall
   220 Bighorn Sheep during the winter and spring
4. Take realistic steps to protect and improve conditions on highly erodable soils and critical big game habitat (especially winter).
5. Take realistic steps to protect and improve the critical anadromous fish habitat
6. Undertake a cooperative effort with the Forest Service, State Land Department, Soil Conservation Service, University of Idaho Range Science Department, Idaho Fish and Game Department, U.S. Geologic Service and Challis Unit BLM permitees to design a management plan for the Challis Unit that would achieve the above goals.

APPENDIX 2-A - Methodology for Vegetation Inventory and Forage Allocation

Vegetation Inventory -

The methodology for determining the ecological condition of the range is faulty stemming from a faulty definition of "Range Condition" found on Page 2-1.

The definition commonly used within the range science dicipline make no reference to climax plant community as this is strictly theoretical condition and also not necessarily the most desirable condition.

This definition and methodology would naturally lead to good and excellent condition ranges being downgraded and could lead to fair or poor condition ranges being upgraded. To say they would probably balance out would be a very unprofessional approach.

A much more professionally acceptable definition of "range condition" would be the current condition of the range as it relates to the potential of which the particular area is capable.

FORAGE ALLOCATION

The biological limit factor as it is used in this EIS does not conform to the biological use factor as it is commonly applied in the range science discipline. It is unrealistic and inflexable and would lead to a drastic underestimation of the total forage available for grazing. The factor (30%) for spring is especially unrealistic as a much more widely excepted rule of thumb factor for spring would be 60%.

The factors used in weighting diet preferences among the grazing ungulates contains some significant errors. Grass never plays an important role in the diet of a deer excpet for a very short time in early spring. More realistic factors for deer, antelope and bighorn sheep for spring and fall-winter are as follows: *

	SPRING			FALL-WINTER		
	Grass	Forb	Browse	Grass	Forb	Browse
Deer	(3) 5	(7) 90	(47) 5	(12) 0	(5) 10	(83) 90
Antelope	(25) 4	(25) 50	(50) 46	(5) 5	(5) 5	(90) 90
Bighorn Sheep	(3) 15	(3) 60	(94) 25	(84) 54	(8) 6	(7) 40

* BLM figures in parenthesis

These errors in the application of the biological use factors and the diet preference factors would cause a significant error in determining the number of AUMs of forage available for each class of grazing animal.

My last comment deals with the section on wilderness contained in Chapter 2. The last paragraph stating that "until the inventory can be accomplished, areas that may have wilderness characteristics are to be managed so as not to impair their suitability for wilderness preservation", is a direct contradiction of

Section 201 (a) of the Federal Land Policy and Management Act. This section states, "The preparation and maintenance of such inventory or the identification of such areas shall not, of itself, change or prevent change of the management or use of public lands. Interim management only applies to the period of review of these lands that are identified as having wilderness characteristics."

Respectfully submitted,

John L. Hatch

John L. Hatch
Director of Public Affairs
Idaho Farm Bureau Federation

JLH/aw

OFFICE OF THE DIRECTOR

(29)

United States Department of the Interior
BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

September 27, 1978

Memorandum

To: State Director, Bureau of Land Management, Boise, Idaho

From: Chief, Office of Environmental Coordination, Bureau of Mines

Subject: Draft supplemental environmental statement for a revised range management program for Challis Planning Unit, Bureau of Land Management, Custer County, Idaho

If under existing law the establishment of grazing districts does not restrict the right of entry for mineral exploration and development, there should be no impact on hard rock minerals from implementation of this program. We believe, however, that long-term range management planning could be improved if possible mineral development were taken into account. This would be difficult at best, but identifying known mineral resources in plans such as this would give planners some idea of areas of potential surface use conflicts such as may happen in the Bruno Creek allotment.

The Bureau of Mines Mineral Industry Location System (MILS) files contain information on known mineral occurrences, prospects, and mines. In the Challis unit, prospects have been examined for fluorspar, mercury, molybdenum, magnesium, tungsten, gold, silver, copper, lead, and zinc. Production has come from sand and gravel, silver, and tungsten operations.

We would like to be of assistance in this regard. Mr. Richard Appling, Chief of our Western Field Operation Center, 315 East Montgomery Street, Spokane, Washington 99207 could provide further information.

We appreciate the opportunity to review this statement.

Chief, Office of Environmental Coordination

W.L. Dare

State Of Idaho
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
EXECUTIVE OFFICE OF THE GOVERNOR

JOHN V. EVANS
Governor

Statehouse
Boise, Idaho 83720

September 26, 1978

State Director
Bureau of Land Management
Federal Bldg., Box 042
Boise, Idaho 83724

Re: Draft Supplement Challis EIS (BLM)
SAI # 00880999

Dear Sir:

The review of the Challis Grazing Unit draft supplemental statement (SAI#00880999) has been completed.

The following State and areawide agencies were asked to comment:

Art Tackett, Southeast Idaho Regional Planning Director
East Central Idaho Planning and Developement Association
Idaho Department of Agriculture
Idaho Department of Fish and Game
Idaho Department of Health and Welfare, Division of Environment
Idaho Department of Lands
Idaho Department of Water Resources
Idaho Transportation Department
Idaho Historical Society
Idaho Division of Budget, Policy Planning and Coordination
Bureau of Natural Resources

The following agencies responded with comment:

East Central Idaho Planning and Development Association
Idaho Department of Agriculture
Idaho Department of Health and Welfare, Division of Environment
Idaho Historical Society
Idaho Department of Lands (contacted applicant)
Idaho Transportation Department (no comment)

The Idaho Department of Agriculture suggests in their comments that there be a sale of excess "wild horses" rather than an adoption program. They state that "a realistic economic approach to the area should seriously be considered."

EQUAL OPPORTUNITY EMPLOYER

Challis Planning Unit
Page -3-

"the proposed action is not expected to change the congregation of livestock and wildhorse use in the riparian zones and the deterioration of riparian vegetation." Considering the use of early spring and seasonal grazing in these units and the vegetative conditionand trend I question if the management plan meets the requirements of the Federal Land Policy and Management Act of 1976, Section 102.

The Idaho Department of Fish and Game does not believe that the Draft plan provides suitable goals and objectives, that it is not responsive to solving the most severe problems occurring in the unit and suggest that the most critical environmental problem areas be made and a management plan be designed to solve these problems.

The State Clearinghouse urges your consideration of the enclosed comments. Please contact this agency if a meeting is desired to discuss concerns raised by the reviewing agencies. We also encourage contact with the reviewing agencies as appropriate. We have appreciated this opportunity to review.

Sincerely yours,

Michelle Liebel

Michelle Liebel
State Clearinghouse Coordinator

Challis Planning Unit
Page -2-

The Idaho Department of Health and Welfare, Division of Environment "supports the implementation of the proposed plan since it will improve watershed conditions of the Planning Unit and, hence, protect or improve water quality. See their attached comments for comments referencing BLM's obligation to comply with State requirements for water pollution control and abatement and Division of Environment's efforts to develop "best managment practices for nonpoint sources of pollution control under the section 208 planning process." Also note their comment regarding their desire to see that BLM improve upon its description of the State water quality program.

The Idaho Historical Society comments that the BLM will need to solicit comment from the Advisory Council on Historic Preservation, as sites eligible for the National Register of Historic Places will be effected. BLM will also need to contact the State Historic Preservation Officer concerning eligibility of historic sites in the Challis Unit. The Historical Society would like to see the final environmental statement and outline of topics for the cultural plan outlined prior to the three year deadline that BLM has set. They encourage this to be completed within a year due to possible damage of important historical sites over a longer period of time.

Comments were also submitted by East Central Idaho Planning and Development Association, areawide clearinghouse for Region VI. They express concerns over the necessity of grazing cuts proposed by the draft environmental statement, concern that the cumulative effects of grazing cuts by both the BLM and Forest Service are being ignored, that local input is not shown in the supplemental statement to have been considered, and that economic effects are not properly projected. Please see their comments for specific references to the draft environmental statement.

The Idaho Department of Fish and Game submitted suggestions for modification of the objectives designed to accomplish the stabilization of the basic soil resource and improve the vegetative resource, a statement that they do not own land in the Challis Planning Unit, indications that they question the objective of providing forage for 220 bighorn sheep with only the protection of the critical bighorn wintering areas, comments that turbidity which originates from the Challis Planning Unit has a very significant impact on the fisheries downstream (loss of fishing opportunity), and that large quantities of sediment are contributed due to watershed and effects of excessive livestock use on the streambanks. They also state that a major problem with the proposed plan is the continued use of early spring and seasonal grazing. They see that there is no data presented to indicate range conditions and trends support the use of seasonal grazing. The data provided indicates that intensive managment is needed. The Department states that Chapter 6 on relationshop between short term uses and maintenance of long term productivity does not appear complete; they suggest a more detailed description. Finally, they question whether the management plan meets the requirements of the Federal Land Policy and Management Act of 1976, Section 102:

(Page 3-14, Paragraph 2) This section states that "vegetation will receive the same or additional livestock use in the Round Valley, Pine Creek and Sullivan Creek." Page 3-16, Paragraph 2,

STATE OF IDAHO
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
BOISE, IDAHO 83720

TO: Monte Richards
Fish & Game
Statehouse

DATE: August 30, 1978

FROM: State Clearinghouse
Bureau of State Planning and Community Affairs
Statehouse
Boise, Idaho 83720

RE: Bureau of Land Management//CHALLIS GRAZING UNIT; Revised Range Management Plan.

SAI # 00880999

The enclosed Revise supplement is referred to you for review and comment in accordance with the U. S. Office of Management and Budget Circular A-95. If your agency has an interest in this document and wishes to comment on it, please check the appropriate box (es) and return this memo, with your comments, to the State Clearinghouse no later than Sept 25, 1978.

☐ No Comment

☐ Contacted Applicant

☐ I Was Already Aware of This Project

☒ Comments Attached

Reviewers Signature Ralph Pedroson Date 9/24/78

Title Program Coordinator

STATE OF IDAHO

DEPARTMENT OF FISH AND GAME 600 SO. WALNUT P.O. BOX 25
BOISE, IDAHO 83707

September 22, 1978

Mr. William L. Mathews
State Director
Bureau of Land Management
Federal Building, Box 042
Boise, Idaho 83724

Dear Mr. Mathews:

Department personnel have reviewed the Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit and I offer the following comments and recommendations for your consideration.

Page 1-9, Purpose and Objectives of the Proposed Action

Since the purpose of the proposed action is to "stabilize the basic soil resource and improve the vegetative resource," the objectives should be designed to accomplish this purpose. Objectives 1, 2, 3, 4, and 5 are management decisions designed to accomplish the objectives of the plan and are not themselves objectives. I suggest that the objectives be rewritten to accomplish the stated purpose. Possible objectives could be: 1. Reduction of sediment yields by _____ percent. 2. Raise vegetative condition class by _____ classes during the 15-year period. 3. Increase available AUM's by _____, etc.

Page 2-52, Paragraph 2

The department does not own land in the Challis Planning Unit.

Wildlife

Page 3-21, Paragraph 1

I question whether the objective of providing forage for 220 bighorn sheep can be met with only the protection of the critical bighorn wintering areas. The critical portion of winter range in the East Fork is at or near winter carrying capacity. The goal of 220 bighorns will not be reached unless winter ranges bordering the critical areas are extended and supplied with good quality bighorn habitat. In this section (Page 3-20, Paragraph 7) as well as others (Page 3-16, Paragraph 4), (Page 3-17, Paragraph 2) the statement is made that there is little competition between livestock and wildlife due to the fact wildlife are presently concentrating use in areas where livestock do not graze due to distance from water and steepness of slope. Based on wildlife use in areas where livestock are not grazed I believe that much of the area presently used by livestock would be used by wildlife if the vegetation was not abused through livestock and wildhorse grazing. The drastic change in plant composition through overuse by livestock has virtually eliminated mammalian and avian use along most riparian zones. The proposed plan does little to mitigate this adverse effect. (Page 3-14, Paragraph 2) This is a long term adverse competitive effect that has not been adequately covered in the section on adverse effects.

Soils & Water Quality

Turbidity which originates from the Challis Planning Unit has a very significant impact on the fisheries downstream from this unit. Each year, there is a loss of fishing opportunity during the salmon and steelhead fishing seasons due to excessive turbidity from the Challis Planning Unit. In early September, 1978, severe thunderstorms fell on the planning unit and halted the resident fishery for several days. There is also a loss to other recreation, such as floating, when the river is so aesthetically displeasing.

The Road Creek drainage contributes large quantities of sediment due to the state of the watershed and the effects of excessive livestock use on the streambanks. The proposed action includes only reduction of livestock use; the pattern and period of use is unchanged in the Road Creek Allotment. I assume the studies described on 1-19 are designed to evaluate the rest rotation systems in the allotments at the head of the drainage. It states that the studies would "provide a basis for changing management of livestock if objectives for water quality and fish habitat are not met." I cannot find any objectives for either water quality or fish habitat.

In Table 8-68, Page 8-109, the sediment yield for the wildlife maximized alternative is only 60 lbs/acre less than the livestock maximized alternative. Since there is a substantial change in vegetation condition between these alternatives, I question the sediment yield estimates.

Vegetative Trend and Condition

A major problem with the proposed plan is the continued use of early spring and seasonal grazing. Most units are scheduled to be grazed 2 to 8 weeks before plant phenology dictates grazing should occur. This dual use is scheduled to occur on 8 allotments. The Rationale for MFP Recommendations, Page A-8, Paragraph 1, states that "seasonal grazing is proposed in those units because present range condition and trend and economics do not support the concept of developing intensive management on these allotments." I see no data presented to indicate range conditions and trends support the use of seasonal grazing. Your data indicates that 83% of the 8 seasonal grazing allotments are in poor to fair condition and 0 acres are listed as improving in trend. This data would indicate the need for intensive management. The MFP rationale for continued early spring grazing is not given and should be included in Appendix, 1-C.

EQUAL OPPORTUNITY EMPLOYER

Chapter 6

The chapter on relationship between short term uses and maintenance of long term productivity does not appear complete. Data presented in Table 8-68 indicates a substantial reduction in long term productivity for the proposed action (+6,933 AUM's) when compared with the no grazing alternative (+13,754) or wildlife maximized (+11,167) or reduced grazing level (+13,501). A similar situation exists when the annual net income short term is compared with the annual net income after 15 years; proposed action -38,000, wildlife maximized +136,458 and reduced grazing level +151,772. It appears that if the wildlife maximized alternative were chosen there would be an additional 8 percent short term economic loss but a long term increase of $174,458 would be realized. I suggest a more detailed description of the short term use vs. long term productivity be included.

Page 3-14, Paragraph 2

This section states that "vegetation will receive the same or additional livestock use in Round Valley, Pine Creek and Sullivan Creek." Page 3-16, Paragraph 2, "the proposed action is not expected to change the congregation of livestock and wildhorse use in riparian zones and the deterioration of riparian vegetation." Considering the use of early spring and seasonal grazing in these units and the vegetative condition and trend I question if the management plan meets the requirements of the Federal Land Policy and Management Act of 1976, Section 102.

The Bureau is apparently attempting to put some management constraints on the Challis Unit plan, but has failed to provide suitable goals and objectives that are designed to accomplish the stated purpose of the action. This plan is not responsive to solving the most severe problems occurring in the unit. I suggest that a list of the most critical environmental problem areas be made and a management plan be designed to solve these problems.

Sincerely,

DEPARTMENT OF FISH AND GAME

Joseph C. Greenley
Director

cc: Bureau of Program Coordination
U.S. Fish and Wildlife Service
Bureau of Fisheries
Bureau of Wildlife
Region 6
W. Bodie
K. Ball

STATE OF IDAHO
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
BOISE, IDAHO 83720

TO: Monte Richards
Fish & Game
Statehouse

DATE: August 30, 1978

FROM: State Clearinghouse
Bureau of State Planning and Community Affairs
Statehouse
Boise, Idaho 83720

RE: Bureau of Land Management//CHALLIS GRAZING UNIT; Revised Range Management Plan

SAI # 08080299

The enclosed Revise supplement is referred to you for review and comment in accordance with the U. S. Office of Management and Budget Circular A 95. If your agency has an interest in this document and wishes to comment on it, please check the appropriate box (es) and return this memo, with your comments, to the State Clearinghouse no later than Sept 25, 1978

[ ] No Comment

[ ] Contacted Applicant

[ ] I Was Already Aware of This Project

[X] Comments Attached

Reviewers Signature Ralph Tebson Date 9/24/78

Title Program Coordinator

United States Department of the Interior

IN REPLY REFER TO
1792(921)

BUREAU OF LAND MANAGEMENT
Idaho State Office
Federal Building, Box 042
550 W. Fort Street
Boise, Idaho 83724

Dear Reader:

Enclosed for your review and comment is the draft supplemental environmental statement on a revised range management program for the Challis Grazing Unit, Idaho.

The Bureau of Land Management proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in east-central Idaho.

Alternatives considered are: (1) continuation of present management (no action); (2) elimination of livestock and wild horse grazing; (3) minimum constraints on livestock grazing; (4) minimum constraints on wildlife; (5) minimum constraints on wild horses; and (6) reduced levels of grazing by large ungulates.

Written comments from public agencies and interested citizens concerning the draft supplemental statement will be accepted until September 27, 1978. Comments should be sent to State Director, Bureau of Land Management, Federal Building, Box 042, Boise, Idaho 83724; telephone - (208) 384-1770.

There will be a public hearing concerning the draft supplemental statement on September 6, 1978, at 9:00 a.m. at the American Legion Memorial Building, Challis, Idaho and on September 7, 1978, at 1:00 p.m. at the Rodeway Inn, Cascade Room, Boise, Idaho. Written request to testify should be submitted to the Idaho State Director prior to the close of business on September 1, 1978.*

Testimony presented in the public hearing and written comments submitted to the State Director will be considered in preparing the final supplemental environmental statement. A decision on the proposed Challis range management program will not be made until after the final supplemental statement is completed.

* Please call Fred Cook 384-1770 if you wish to testify

Sincerely yours,

Larry L. Woodard

Larry L. Woodard
Acting State Director

Enclosure

STATE OF IDAHO

DEPARTMENT OF FISH AND GAME 600 SO. WALNUT P.O. BOX 25 BOISE, IDAHO 83707

Sept 25, 1978

Mr. William L. Mathews
State Director
Bureau of Land Management
Federal Building, Box 042
Boise, Idaho 83724

Dear Mr. Mathews:

Department personnel have reviewed the Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit and I offer the following comments and recommendations for your consideration.

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Sincerely,

DEPARTMENT OF FISH AND GAME

Joseph C. Greenley
Director

cc: Bureau of Program Coordination
U.S. Fish and Wildlife Service
Bureau of Fisheries
Bureau of Wildlife
Region 6
W. Bodie
K. Ball

EQUAL OPPORTUNITY EMPLOYER

STATE OF IDAHO
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
BOISE, IDAHO 83720

RECEIVED
SEP - 1 1978
E.C.I.P.D.A.

TO: ECIPDA
Rexburg, Idaho 83440

DATE: August 30, 1978

FROM: State Clearinghouse
Bureau of State Planning and Community Affairs
Statehouse
Boise, Idaho 83720

RE: Bureau of Land Management//CHALLIS GRAZING UNIT; Revised Range Management Plan.

SAI # 08880999

The enclosed Revise supplement is referred to you for review and comment in accordance with the U. S. Office of Management and Budget Circular A-95. If your agency has an interest in this document and wishes to comment on it, please check the appropriate box (es) and return this memo, with your comments, to the State Clearinghouse no later than Sept 23, 1978.

☐ No Comment

☐ Contacted Applicant

☐ I Was Already Aware of This Project

☒ Comments Attached

Reviewers Signature [signature] Date 9-18-78

Title [illegible]

Member Counties
Bonneville
Butte
Clark
Custer
Fremont
Jefferson
Lemhi
Madison
Teton

E.C.I.P.D.A.
EAST-CENTRAL IDAHO PLANNING AND DEVELOPMENT ASSOCIATION, INC.
12 NORTH CENTER • REXBURG, IDAHO 83440
P.O. BOX 330 • 356-4524

September 21, 1978

Mr. William L. Mathews, Acting State Director
Bureau of Land Management
Federal Building
Box 042
Boise, ID 83724

Dear Mr. Mathews:

We are herewith respectfully submitting the comment of the East-Central Idaho Planning and Development Association, Inc., a private non-profit planning and development corporation broadly representative of the local public officials in our nine member counties plus other interests. We are acquainted with the effort which went into the Draft Supplemental Environmental Statement on the Challis Unit, however we find the Environmental Statement and the process by which it was developed deficient in many respects.

The major concerns of the East-Central Idaho Planning and Development Association are; (1) whether the cattle grazing cuts proposed by the Draft ES are necessary; (2) that cumulative effects of grazing cuts proposed by both the BLM and the Forest Service are ignored by those agencies; (3) that the input of local people who are familiar with operative conditions are not shown in the supplemental environmental statement to have been considered; and (4) that economic effects are not properly projected.

Unless otherwise identified, references are to pages in the Draft Supplemental Environmental Statement on the Revised Management Program for the Challis Planning Unit.

1. Grazing Cuts

The first issue is whether the cuts are necessary, The previous Final Environmental Impact Statement for the Challis Planning Unit released by the Bureau of Land Management in 1977 proposed 19,672 AUM's for domestic animals and 13,871 AUM's of grazing for wildlife including horses. The Draft Supplemental Environmental Statement for the Challis Planning Unit just released does not clearly identify why these allotments were cut to 10,436 AUM's for cattle and 10,202 AUM's for all wildlife as shown on Page 1-2.

Page 2

Page 2-5 says that figures for present total AUM's "are based on proper use of the forage plants" and then says 30,297 spring AUM's are available and 34,617 summer SUM's, yet on Supplement page 1-2, only 20,638 total AUM's are proposed. Why is there such a large difference?

Because this Challis Environmental Statement will set the pattern for 211 more environmental statements across the United States, it is obvious that there are national pressures which effect the writing of this Environmental Statement. However, it seems that both the Bureau of Land Management and environmentalist who seek to protect our resources should be able to accept management of our grazing land which improves or stabilizes the range even though this management allows continued grazing at present or increased levels. The Morgan Creek grazing unit near Challis has been jointly managed by the Forest Service and Bureau of Land Management for seven (7) years, with a rest rotation grazing system. Similar rest rotation systems are in effect in areas of the Boise front, Payette River, Oneida County, and on the Oakley demonstration range. The Morgan Creek is not directly comparable to the grazing units in the Challis Planning Unit mostly due to differing precipitation. However, the Morgan Creek Unit does show that grazing and range improvement such as watering facilities and fences can be used as tools to improve the range without large cuts in the numbers of animals using the range. This indicates that the Bureau of Land Management needs to make and carry out a commitment to range improvements. For many years past local ranchers have made range improvements on their own. They have had little success getting the Bureau to make more. This range improvement should be done prior to any livestock reduction. Cows and wildlife have been grazing in the Challis area together for the past 100 years. The Bureau of Land Management has been involved in Range Management for over 30 years. Why doesn't the Bureau have records of range conditions and trends to allow the Bureau to show the effect of joint wildlife and livestock grazing upon the various grazing allotments within the Challis Planning Unit? Then it wouldn't have to use a theoretical system of allocation. How often will monitoring of range conditions occur once the proposed management program is implemented? Page 1-17 of the Draft Environmental Supplement only says routinely. How long after implementation of the Management Program will it take to establish trends to demonstrate the results of management proposed in the supplement? How soon will range conditions change under the new management program. Page 1-9 indicates 5 to 15 years while Page 3-15 implies 3 to 6 years.

Stock is allocated 83% of its carrying capacity and wildlife is allocated 87%. Stock AUM's will be cut an average of 48% from present conditions immediately, while wildlife will increase 15% which should take some time. According to Page 1-2 of the Supplement, wildlife (other than horses) will increase from 6,758 AUM's to 7,772 AUM's while horses will be cut over 6,000 AUM's. This wildlife reduction is 1,140 AUM's or 6.5% of the present cattle allotment and 10% of the proposed cattle allotment in the Supplement. Could these AUM's be used to cushion the cuts required in the first few years in the allotment management plans?

Page 3

Page 2-2 - Can allotments be maintained where the range condition trend is stable or up and only reduced where the trend is downward?

If 22% of area range condition trends are down and with a large cut in grazing by wildhorses and a limited rise in wildlife grazing, why isn't 22% cut in grazing of livestock enough rather than 50% until management improves conditions.

Why was grazing suitability determined by slope, water, and vigor as stated on Page 22 after growth was set aside for biological reserve? Stacking two sets of criteria allows only seven (7) pounds of forage from each hundred (100) pounds of vegetation grown.

As grazing was allocated 17,000 AUM's in the other Final ES and in the no change alternative number 1 of the supplement, why is grazing only given 12,000 AUM's in the Supplement alternative number 3 entitled, "Minimum Constraints on Livestock?"

As noted on Page 2-1, why were climax species chosen as the measure of quality of the vegetation? Often times climax growth is not as palatable to wildlife as transitational growth. If there is any data available to the Bureau of Land Management to show that climax growth would be most suitable to that wildlife occurring naturally, this should be included in the Environmental Statement.

Page 1-9 says that 50% of forage vegetation must remain unused to protect plant vigor and soil, yet Page 8-11 says the year long amount that can be removed is 25 to 30%; which limit will be used? Does this variation come from the rest/rotation system or will 33% more grazing reduction be required by later AMP's to implement rest rotation using three (3) pastures?

According to Bureau figures, there has been a downtrend in grazing on National Resource Lands since 1948. These figures are given in the Final Environmental Impact Statement. Why hasn't this decreased grazing improved the range?

According to Table 3-15 on Page 3-38, average use for most permittees is lower than current use of AUM's. Therefore the proposed cuts effect may be understated in the supplement.

In summary, many of the ranchers are in long-term family operations and they are as interested in maintaining good range conditions on the public land as are the BLM or responsible environmentalists. This is in both their short and long-term interest in producing the maximum size calf and healthiest cow which increase their return as noted on Page 14 of the ABT Associates, Inc. study which was done for the Bureau of Land Management.

The cuts proposed in livestock grazing are represented as necessary to protect wildlife which exists in the planning unit. Possible the Bureau has credited too much effectiveness to range management to maintain and increase wildlife populations. We would suggest that the Bureau coordinate very closely with the Idaho Fish and Game Department and their game management programs. The amount of hunting which the Fish and Game

Department allows will also have a major impact on wildlife populations. This is explicitly recognized on Pages 13 and 15 of the economic study done by ABT Associates, Inc.

Antelope, deer, and elk forage does overlap the forage of livestock, whereas forage of Big Horn Sheep according to the Draft ES does not. Also Elk were introduced into the area in 1948. Why are they given preference immediately over livestock which were also introduced into the area (not naturally occurring)?

Page 3-32 says that fencing and cattle grazing may cause overgrazing by wildhorses or reduce their access to winter range. The Bureau proposed to reduce the horse herds. Shouldn't the first objective of the Bureau's wildhorse management be to remove or reduce those herds that are overgrazing or which would be kept from winter range by fences and thus this is no problem? As cattle are not on the range in winter, temporary fences could be used to avoid interfering with wildhorse migration.

Page 3-32 also says that cows and horses will be competing for forage, but the reduced number of cows and wildhorses will be spread over a larger area. This would seem to reduce their competition for forage, (1) because they are spread over a larger area, (2) because the vegetation growth has improved through management so that there is more vegetation available as forage on both a qualitative and quantitative basis.

Page 3-39 related game populations to carrying capacity. Pages 3-18, 3-19, and 3-20 raise the possibility of increased Big game herds. As range improvements and grazing cuts increase carrying capacity, will game populations be allowed to rise thus requiring more grazing cuts to improve their carrying capacity?

2. Cummulative Effects of Changing Management Plans

The second topic is the cumulative effect of the management proposals of the Bureau of Land Management and of the Forest Service. A cumulative effect can be compared to cutting down a tree with an axe. The first few blows do only minor damage but as they continue, finally the tree falls. In fact, this occurs before the tree is cut all the way through. The point of this analogy is one little bit of grazing reduction either by AUM's or by time allowed out to the allotment is not going to make much difference, but several will reduce the profit margin until the ranch can still operate cows but does not operate economically.

There are 60 planning units in Idaho and the Forest Service is looking at approximately 1,290,000 acres of the land they control in Custer County for inclusion in Wilderness Areas. Much of this million plus acres can be assumed to be suitable for livestock grazing as well as wildlife habitat. The Bureau of Land Management has recommended livestock grazing cuts in this supplement and the final impact statement previously done. The Forest Service plans reductions in grazing on their public lands as mentioned on Page 47 of the Idaho Supplement to the Draft Environmental Statement on the Roadless Area Review and

Evaluation which was done in June of 1978 by the Forest Service. If both agencies continue such cuts on public land, the future of economic cattle grazing in Custer County and indeed throughout much of the West seems very bleak. We feel that the cumulative effects of their management plans do need to be addressed. Possibly all the planning units in one state could be summarized after the individual planning unit Environmental Statements have been done. If cattle herds are reduced throughout the West, beef prices will increase.

What will be the effect of the future environment assessment record on each allotment management plan which is required according to the supplement? If the environmental assessment can propose furthur grazing cuts, this extends the period of uncertainty for cattlemen and their investment in their operation which may continue to keep them at an uneconomical level of operation.

Page 1-3 - When will the Management Framework Plan Step 3 be completed?

Page 2-29 - The Bureau of Land Management is setting wilderness policy. Will their survey of wilderness further reduce allotments?

3. Weighting of Local Comment and Concern

The third major issue concerns the value that the Bureau of Land Management gives to local input in their Draft process. Since this is public land, the public at large has the right to make comments on how they would like to see the land used. However, the public is often distant from the situation and unfamiliar with the specific problems or potential in a location. Local people who are living on the land are familiar with it. They do seem to have some right to expect their opinions and the opinions of trained resource managers, whether public or private, to be given more weight than the general comments of the public.

Page 9-1 speaks of coordination and consultation in preparing the supplement. The Idaho Department of Lands manages most of the 18,000 acres of State Land within the Challis Planning Unit. They are not listed in the Supplemental distribution list although they commented on the Final ES. Why were they not consulted?

There may be some feeling by both the Bureau of Land Management officials and the Public who are only dependent upon this draft supplement and the previous Final Environmental Impact Statement that local land users want to ruin the range to make a short-term profit. This is not the case as shown on Page 9 of the ABT study. This study states that ranchers voluntarily reduced their grazing to protect the range. After the ranchers thus tried to cooperate with BLM, their base grazing allotment was reduced even further in the Supplemental Draft ES because they had not been using all their grazing rights. Page 14 of the ABT study reports ranchers arguing that if they overgrazed the area, the animals gain less and therefore the rancher's revenue falls. Certainly if cases of abuse of the grazing resource exist, they need to be stopped and corrected. However, just as strongly, when cooperation to improve the grazing resource occurs, it should be rewarded.

To show that local input is being evaluated, possibly it should be written more clearly into the draft. In sections where facts gathered by the Bureau or its consultants, counter statements made by local individuals or their consultants, this could also be mentioned. As it is, local people feel that their comments right or wrong are taken at public hearings and then left out of the ES.

If experience is the best teacher, the experience of those people on the ground managing cattle, viewing the game and the grass resources that exist should be taken into account by the trained range management of the Bureau and, parenthetically, the Forest Service. Again this brings us back, as far as input, to the fact that grazing has existed in the area for 100 years, the Bureau of Land Management has been operating in the area and has been responsible for the grazing resource since the passing of the Taylor Grazing Act 1934. It seems that there should be some local scientific data available from the Bureau of Land Management to show the actual trends rather than having to develop grazing management plans. They cite the soil conservation survey practice of using this methodology. However, the soil conservation survey then sets carrying capacity by the actual effect of stock on the land and the range condition trend. The Bureau of Land Management used a different method. After studying the soil and ecology trends the Bureau projected allocations by slope and water criteria which in other instances has eliminated grazing according to local ranchers.

Modern range management uses grazing livestock to improve range conditions. Such modern management has been demonstrated in both the Herd Creek and Morgan Creek areas. The Bureau's Supplemental Environmental Statement should better reflect the possibility of this sort of management. Area ranchers and any range management experts would agree that the cattle need to be dispersed and management such as fences is required to rest vegetation so that it can be vigorous and support the optimum populations of both livestock and wildlife.

A useful place for local inputs could be proposed range improvements. Also one alternative might have described the type of range improvements and management local people want. Local permittees propose that present stocking rates by maintained, develop management plans, reduce wild horses to 162 and monitor trend conditions.

4. Economic Issues

The following economic questions occur in reading the supplemental and Final Environmental Statements.

The environmental impact state ment should take a closer look at the economic impact of the beef exported from Custer County to other area feed lots. Also the effect of imports or purchases by Custer County Cattlemen from outside Custer County itself. Although this specific data would not be as easy to obtain, generalizations might be helpful. A broader issue not very directly addressed by the Draft Environmental Statement is whether this part of Idaho with its scenic resources is to

become a playground for the rest of the state and nation or if it is to remain an economically productive area. If the basic desire of the Bureau of Land Management is to turn this into a playground, then this should be made more explicit and possibly some restitution given to existing land owners to help them adjust to a new economy based on tourism.

On Page 3-34 of the supplemental statement, the possibility is raised that permittees displaced from Bureau of Land Management grazing might be able to use private pasture for their cows and use either their own or another's land to raise hay. Considering that 96% of the land in the county is Federal land, how many acres are left in private ownership which could be used for agriculture production? Is this use of private land implied as a long range alternative to Bureau of Land Management grazing, or is this use of private land to occur for 15 years until the entire management program has had a chance to improve the vegetation?

Page 3-33 of the supplement says that to compensate reduction of AUM's, livestock operators will have to buy hay, lease pasture or reduce numbers. Yet on the same page BLM admits that, "There is very little irrigated or dry pasture to lease in the Challis area. The only alternative available for many of the range users would be to reduce their herds." How much land is available in acres for use as pasture, especially in the face of proposals in the supplement for housing and industrial growth?

Page 8 of the ABT study reported that herd size on the small ranches was determined by how much winter hay could be grown on the ranch. On page 13 they reported that starting sprinkler irrigation to raise more hay is too expensive for the average small and medium rancher. These facts seem to intensify the effect of BLM grazing cuts.

Page 3-34 says that there will be a loss of $307,000 of cattlemen's income for the 38 permittees. This would average $8,079 loss or reduction of 69 cows from 180 head herd which would be 38% of the average herd. What makes the Bureau of Land Management feel that if all of these 38 permittees are losing this much money, only seven (7) stockmen will be selling out?

On Page 3-39 of the draft it is said that only seven (7) ranchers on the east fork of the Salmon will be selling their land, either to recreational development or to other ranchers interested in consolidation into a larger operation? This question comes about because the data on 3-34 and 3-39 says that 13 ranchers will loose an average of 35% of their BLM allotment. Also, in the ABT Associates study, the nine (9) ranchers cited as representative of all the permittees said that, if not in debt, they would try to cut back their herds, but if ranching did not remain economically viable, they would have to sell out. Those who were in debt said that they would sell out immediately if faced with cutting their herd because of cuts in Bureau of Land Management grazing allotments. All of the representative ranchers said that selling out was a real possibility. Local estimates are that up to 26 ranchers will be forced to sell out. Page 12 of the ABT study reports, "Historically their (rancher's) profit margins have not been high enough to create the

required surplus during the other three years to cover the loss incurred in the forth year," by the proposed rest/rotation system.

Page 9 of the ABT study reports that on medium sized ranches, wives work. This can be interpreted as necessary work becaue the ranch is not now a profitable economic unit. These proposed grazing reductions would worsen the situation.

Page 3-39 concerns loss of jobs and income. It should show of the impact of the loss of the total $307,000 not merely $70 or $230,000 loss as was done. Would it be possible to break down the income figures more clearly to show how much motel, restaurant and other trade income, comes from tourists and how much comes from residents of the county. If $370,000 of income leaves the local economy, what impact would that have on local ranch suppliers?

It was good to see more disucssion of the impact of second home sales in the Draft Supplement than there was in the Final ES. Yet the section on Impacts of the Proposal, the discussion of second homes still seems inadequate. Page 3-39 says that as homes increase, the tax base will improve and page 3-40 says new homes will improve the tax situation. This has very seldom been the case in any rural area with second home subdivisions. Specifically, a study entitled, "Recreation Home Developments in Idaho: Five Case Studies," by Richard D. Payne, Ph.D., published at Boise State University in March of 1977, said that in the case of Island Park, cost to the county outweighed revenue.

Page 3-40 through 44 does not mention any impact from second home development on water quality, yet there is the chance of increased runoff, diversion of water for domestic needs and possibily sewage contamination. These impacts are noted on Page 3-31.

Page 3-44 claims that second homes would cause no damage to recreation. What about the disturbance of game and fish cited on Page 3-21 and 3-31?

Pages 3-18, 3-20, and 3-21 speak of the negative impact which residential developmental could have on big game populations. Although the Bureau of Land Management admits that recreational subdivisions will have an effect on wildlife and water quality and thus on recreation, no mention is made of ameliorative tactics to reduce this negative impact. Possibly the control of impacts would require cooperation and coordination with other federal and state agencies, however, this issue needs to be addressed.

We agree with the reduction of "wild" and abandoned horses. How soon after acceptance of the management program would these reductions be made?

Page 1-20 of the Supplement mentioned the proposal of the Tuscarora Mine, however, the Clayton Silver Mine which is in operation was not mentioned at all. Will this change in grazing management impact the mine?

The ES proposes to fence streams to improve fish habitat. Will fences be built only where brush cover is an inadequate barrier to protect the stream from livestock? If there are 22.5 miles of important anadromous streams how was it determined to only fence 3.25 miles as stated on Page 1-16 and 1-9?

Page 3-11 says Herd Creek Allotment range condition will still downtrend after management. Why is this? Present range conditions are improving by local judgement. This allotment is being used to study the effect of rest/rotation grazing on wildlife by Professor Peak from the University of Idaho.

On Page 3-34 the bottom paragraph should reference Table 3-15. In Table 1-4 antelope get 426 AUM's. Should this be for each season or the total for the three seasons; summer, spring, and fall?

We are definitely against alternatives 2, 5, and 6, Page 8-1.

Please include all of the ABT associates study in the final ES.

We have submitted this comment in hopes that it will have become more than an academic exercise for our Staff. We certainly look at this much more seriously. We view the Challis Unit as much more than a valuable ecosystem, more than a socio-economic unit - as people. Therefore, we hope that this viewpoint is given its appropriate weight in the "final analysis."

Respectfully yours,

Jack J. Weigand
Lemhi County Commissioner
President, ECIPDA

pc:sb

cc: For Public distribution

STATE OF IDAHO
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
BOISE, IDAHO 83720

TO: Max Hansen
Dept of Agriculture
State house

DATE: August 30, 1978

FROM: State Clearinghouse
Bureau of State Planning and Community Affairs
Statehouse
Boise, Idaho 83720

RE: Bureau of Land Management//CHALLIS GRAZING UNIT; Revised Range Management Plan.

SAI # 00880999

The enclosed Revise supplement is referred to you for review and comment in accordance with the U. S. Office of Management and Budget Circular A-95. If your agency has an interest in this document and wishes to comment on it, please check the appropriate box (es) and return this memo, with your comments, to the State Clearinghouse no later than Sept 23, 1978.

☐ No Comment

☐ Contacted Applicant

☐ I Was Already Aware of This Project

☑ Comments Attached

Suggest a study of the excess "wild horses" (Not an adoption). Aircraft removal approach to the wild should seriously be considered.

Reviewers Signature [signature] Date 9/8/78

Title [illegible]

STATE OF IDAHO
DIVISION OF BUDGET, POLICY PLANNING AND COORDINATION
BOISE, IDAHO 83720

TO: Health & Welfare-Environment
Statehouse

DATE: August 30, 1978

FROM: State Clearinghouse
Bureau of State Planning and Community Affairs
Statehouse
Boise, Idaho 83720

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☐ No Comment

☐ Contacted Applicant

☐ I Was Already Aware of This Project

☑ Comments Attached

Reviewers Signature [signature] Date 9/22/78

Title Administrator, Division of Environment

STATE OF IDAHO

DEPARTMENT OF HEALTH AND WELFARE

DIVISION OF ENVIRONMENT
Statehouse
Boise, Idaho 83720

September 22, 1978

State Director
Bureau of Land Management
Federal Bldg., Box 042
Boise, ID 83724

Re: Draft Supplement Challis EIS (BLM)

Dear Sir:

The Division of Environment of the Department of Health and Welfare has reviewed the subject document and has the following comments by page:

Page I-9 -- Section 313 of the Federal Water Pollution Control Act requires that all Federal agencies comply with state requirements for water pollution control and abatement. One of the management objectives for the Challis planning unit should, therefore, be to meet and maintain Idaho *Water Quality Standards and Wastewater Treatment Requirements*, including the antidegradation requirement. This might also be cited as one of the rationale for the MFP recommendations in appendix I-C.

In addition to water quality standards, the Division of Environment is presently developing best management practices (BMP's) for nonpoint sources of pollution under the Section 208 planning process. BMP's specifically applicable to management of the Challis Planning Unit include those for grazing and forest practices. Section 313 will require BLM to apply the adopted BMP's in management of the Unit.

Page I-20 -- The statement regarding IDHW does not satisfactorily describe the state water quality program. Discussion of Idaho *Water Quality Standards and Wastewater Treatment Requirements* and the 208 planning process would be much more appropriate.

State Director, BLM
September 22, 1978
Page Two

In general, we support implementation of the proposed plan since it will improve watershed conditions of the Planning Unit and, hence, protect or improve water quality.

Thank you for the opportunity to comment on this management plan.

Sincerely,

Lee W. Stokes, Ph.D.
Administrator

LWS/p

EQUAL OPPORTUNITY EMPLOYER

[illegible]
Idaho State Office
Federal Building, Box 042
550 W. Fort Street
Boise, Idaho 83724

Dear Reader:

Enclosed for your review and comment is the draft supplemental environmental statement on a revised range management program for the Challis Grazing Unit, Idaho.

The Bureau of Land Management proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in east-central Idaho.

Alternatives considered are: (1) continuation of present management (no action); (2) elimination of livestock and wild horse grazing; (3) minimum constraints on livestock grazing; (4) minimum constraints on wildlife; (5) minimum constraints on wild horses; and (6) reduced levels of grazing by large ungulates.

Written comments from public agencies and interested citizens concerning the draft supplemental statement will be accepted until September 27, 1978. Comments should be sent to State [illegible]

There will be a public hearing concerning the draft supplemental statement on September 6, 1978, at 9:00 a.m. at the American Legion Memorial Building, Challis, Idaho and on September 7, 1978, at 1:00 p.m. at the Rodeway Inn, Cascade Room, Boise, Idaho. Written request to testify should be submitted to the Idaho State Director prior to the close of business on September 1, 1978.*

Testimony presented in the public hearing and written comments submitted to the State Director will be considered in preparing the final supplemental environmental statement. A decision on the proposed Challis range management program will not be made until after the final supplemental statement is completed.

State Director, Bureau of Land Management
Federal Building, Box 042
Boise, Idaho 83724

Due to the limited time alloted to investigate the Draft Supplemental Environmental Statement for the Challis Planning Unit; my comments are brief and incomplete.

If the Supplemental Environmental Statement for the Challis planning Unit is a example for all wooded lands in the United States, the resulting impact would effect the entire national economy. Considering an economic impact on our nation take for example. In 1976 the United States spent four billion dollars plus ($4,000,000.) for foreign made goods more than foreign countries spend for U.S. made goods. In 1977 the United States spend twenty seven billion dollors plus ($27,000,000) for foreign made goods more than foreigh countries spend for U.S. made goods. Also consider the devaluation of the American dollar. How much of this is due to extreme Environmental standards, Wilderness proposals and other extreme government regulations? I will leave this to the experts, there seems to be quite a few of them around.

next page

The criteria using steepness of slope and distance from water to determine the carrying capacity of the Challis Planning Unit is contrary to the multiple use sustained yield concept.

The Soil Conservation Service provided soils and vegetation data which should have been of major concern in implementing the management plan for the Challis Planning Unit. This also seems to have been ignored by the specialists making the study.

Non Use was a preference given to licensees for range improvement and range protection. The district manager was required to notify the licensee to fill his grazing or his non use would be canceled. Therefore to cancel non use without notice is in violation of the grazing regulations.

During the range adjudication program which took place in the nineteen sixties (1960's), range specialists evaluated the forage and carrying capacity of the ranges; reductions in M.U.M.S. in either time or numbers were made. At that time part of the grazing area that my father and I had used before priority years during priority years and since that time was given

Range Condition and Suitability:

While the terrain is generally rough, the majority of the allotment is suitable for livestock grazing. Suitability considerations are included in the range survey. Approximately 5 percent of the allotment is in poor condition due to high soil erosion potentials. The remainder of the allotment is in good condition. Range condition rating was determined by the standard B.L.M. method.

Licensed use, qualifications, and grazing capacity according to the 1974 survey for the use area is as follows: Licensed use cattle 1225; Class I Qualification 288; 1974 survey A.U.M.'S 186.3.

I feel that impacts created by other uses are being blamed on the livestock use. This is a grave injustice to the livestock industry. Therefore my conclusion is that the specialists making the survey were applying philosophical text book technology to managing the local resources, which is merely using one theory against another theory. Theory isn't worth much without fact to support it.

Sincerely,

Frank Maroffio
Betty Maroffio

happy with this situation, however I did settle for a private allotment. I was required to take non use for the purpose of spraying sage brush for management purposes my full numbers were to be restored over a period of 3 years. Now I find that you propose to reduce my numbers of cattle to a six year average. This is contrary to the agreement entered into at the time of the range adjudication, the district manager informed me that if any grazing capacity was built up, it would be credited to me either in additional number of livestock or time. I feel that I have built up additional grazing capacity in my area I use. This is due to having developed water on two areas where there never was any water before. This water made it possible for my cattle to graze an area where they made little or no use before. This water also provided additional water and feed for wild horses and game animals. I feel that I should be credited with any additional grazing capacity that has been made available in my area I use. Referring to the range survey made in 1974 for Split Pool allotment. This would indicate that the trend was up in my grazing unit. Quoting from photograph of under renewal information:

OREGON ENVIRONMENTAL COUNCIL
2637 S.W. WATER AVENUE, PORTLAND, OREGON 97201 / PHONE: 503/222-1963

September 21, 1978

Mr. Larry L. Woodward
Acting State Director
Bureau of Land Management
Federal Buidling
Box 402
Boise, Idaho 83724

Dear Mr. Woodward:

Enclosed is a proposed plan for the San Felipe Allotment and some general comments pertaining to the supplemental draft for the Challis Planning Unit.

The Allotment Plan for San Felipe was prepared from data contained in the second draft Environmental Impact Statement submitted for the Challis Planning Unit in June 1976. A review of the 1978 data reveals a few minor changes which place additional impact upon the Allotment. For example, the 1978 data adds 97 AUM's to the proposed use for the Allotment. The new data materially strengthens the need for massive cutbacks in grazing use to insure the most rapid recovery from the abusive management practices of the past. There is nothing in the new data to justify a continuation of grazing use of the San Felipe Allotment above the forage productivity of the area as reported in the range surveys of 1951 and 1957. Since we cannot find in the 1978 Draft an estimate of forage productivity, we assume none was made. Forage productivity changes as growth conditions change, and in bad years it may yield 60 percent or even less compared to good years. Accordingly, good range management requires that grazing usage should be placed at the level of poor productive years.

For the San Felipe Allotment, it becomes obvious this adjustment has not been made in the Draft proposal. Because 97 percent of San Felipe is in less than good condition(71,539 acres) and 33 percent (about 24,500 acres) is reported to be in downtrend, coupled with the fact that the average soil loss per anum is reported to be 1.36 tons per acre, there is no valid justification to continue grazing use on this allotment above 1000 AUM's

ALTERNATIVE FUTURES Tigard
AMERICAN ASSOCIATION OF UNIVERSITY WOMEN Portland Chapter
AMERICAN INSTITUTE OF ARCHITECTS Portland Chapter
Southwestern Oregon Chapter
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS Oregon Chapter
ASSOCIATED GENERAL CONTRACTORS OF AMERICA
AUDUBON SOCIETY, Central Oregon, Corvallis, Portland, Salem
BAY AREA ENVIRONMENTAL COMMITTEE Coos Bay
B.R.I.N.G.
CENTRAL CASCADES CONSERVATION COUNCIL Chemeketans, Salem
CITIZENS FOR A CLEAN ENVIRONMENT Corvallis
CITIZENS FOR A BETTER GOVERNMENT
CLATSOP ENVIRONMENTAL COUNCIL
EAST SALEM ENVIRONMENTAL COUNCIL
ECO-ALLIANCE, Corvallis
EUGENE FUTURE POWER COMMITTEE
EUGENE NATURAL HISTORY SOCIETY
FRIENDS OF THE EARTH
FUTURAMERS OF AMERICA, Corvallis
GARDEN CLUBS of Cedar Mill, Corvallis, McMinnville, Nehalem Bay, Scappoose
GREENPEACE OREGON
H.E.A.L., Azalea
LAND, AIR, WATER Eugene
LEAGUE OF WOMEN VOTERS Central Lane Coos County
MCKENZIE FLYFISHERS, Eugene
McKENZIE GUARDIANS, Blue River
NORTHWEST ENVIRONMENTAL DEFENSE CENTER
NORTHWEST STREAMKEEPERS COUNCIL OF TROUT UNLIMITED, Crater Lake, Corvallis, Tigard, Willamette Falls
OBSIDIANS, INC., Eugene
1,000 FRIENDS OF OREGON
OREGON ASSOCIATION OF RAILWAY PASSENGERS
OREGON BASS AND PANFISH CLUB
OREGON GUIDES AND PACKERS
OREGON HIGH DESERT STUDY GROUP
OREGON LUNG ASSOCIATION, Portland & Salem
OREGON NORDIC CLUB
OREGON PARK & RECREATION SOCIETY Eugene
OREGON ROADSIDE COUNCIL
OREGON SHORES CONSERVATION COALITION
O.S.P.I.R.G.
PLANNED PARENTHOOD ASSOCIATION, INC. Lane County Portland
PORTLAND RECYCLING TEAM, INC.
P.U.B.E., Bend
SANTIAM ALPINE CLUB Salem
SELLWOOD-MORELAND IMPROVEMENT LEAGUE, Portland
SIERRA CLUB
Pacific Northwest Chapter, Eugene
Columbia Group, Portland
Klamath, Klamath Falls
Mary Rivers, Eugene
Mary's Peak, Corvallis
Mt. Jefferson, Salem
Rogue Valley, Ashland
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STREAMBUSTERS
SURVIVAL CENTER, U. of O., Eugene
TEAMSTERS FOOD PROCESSORS
THE TOWN FORUM, INC. Cottage Grove
UMPQUA WILDERNESS DEFENDERS
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for at least the next three to five years. This cutback should provide the kind of protection the vegetation needs to recover from abusive use and begin rebuilding the productivity it is probably capable of achieving.

The adjustment that must be made in the operation of the permittee is very large, but this very sick land is incapable of delivering the services or benefits demanded of it. It is harboring what amounts to a cancer and cannot get well without the massive treatent suggested for it. According to Table 3-15 - Economic Impacts, the San Felipe Ranch is 23.26 percent dependent on BLM land for grazing. This is a substantially different figure than is contained in Table 2-36 of the 1976 Draft, which shows the ranch to be 9.4 dependent on BLM land, 2.8 on National Forest and 87.8 on private land. There is no explanation for this wide discrepancy in grazing dependency. If the 1976 Draft figure is accepted, it appears the impact upon the ranch would be relatively minor under the BLM proposal of continuing about the same amount of grazing use equal to the forage productivity estimates of 1951 and 1957.

GENERAL OBSERVATIONS

Proposed Grazing of the Planning Unit

The proposed action on the Challis Planning Unit discloses a reduction in grazing use from 32,922 AUM's to 20,638 AUM's, which amounts to nearly 63 percent. The reduction in use by cattle is 40 percent, by wild horses 72 percent, and an increase in use by wildlife by 15 percent. Because of the accumulated degradation of these lands for maximum production of forage, only time will tell whether the reductions in use are enough to bring this "sick patient" back to full health. These latest proposals are, we hope, realistic enough to accomplish rehabilitation of the land and restoration of its former forage productivity.

Season of Grazing

Table 1-6 proposes that grazing begin on a majority of the Allotments by May 1. On page A-19 it is reported that "Most of the grasses. . .were in the boot stage from 5/15 to 6/1." There is nothing in the proposal regarding fixing of the beginning of the grazing season to coincide with "range readiness". Spring grazing should be delayed until the key forage plants are ready for grazing, and the soil conditions are such that trampling of the soil will avoid compaction and mechanical damage. Traditionally, it is the practice of ranchers to place livestock on the range much before grasses

have reached enough growth to withstand grazing without causing severe damage to both plants and soil. In the Challis Unit is May 1 too early to begin grazing?

PROPER RANGE USE

One of the most important recommendations in the 1978 Draft for the Challis Unit appears in Table 1-4. Under the sub-title "Watershed," it says, "Do not graze more than 50 percent of the current year's production of forage plants used by grazing ungulates." How to apply this standard of forage utilization where the rest-rotation method is used is not explained, as under that method 100 percent of the current growth will often be used in the pastures designated for the "rest treatment." The presence of wild horses unless gathered and handled with the cattle will obviously upset use of the rest-rotation method.

Range Improvements

According to the data 97 percent of the Challis Unit must be fully to overgrazed without the addition of 44.5 miles of pipeline, 51 spring developments and 31 water troughs. There is no indication in the Draft that forage is left unused because of a lack of water. Why then spend money to provide water if its actual need is not apparent? The construction of 54 miles of fence should be critically examined too. Some of it may be more of a hindrance than a help in properly managing the area and the animals that are planned to use it. The plowing and seeding project appears questionable, but the brush beating proposed deserves a priority in the range improvement program.

Predicted Forage Production

The 1978 Draft predicts (if the proposed action is followed) an increase in total livestock production to 17,500 AUM's within a period of 15 years. This is pure assumption, as there is nothing to support such a prediction. There is no harm in indulging in such an exercise, and it may act as an incentive to prevent poor performance on the part of range managers and ranchers alike, in carrying out the mandates of the plans.

Alternate Use Levels

Table 8-1 summarizes the several Alternatives in allocating AUM's to livestock, wild horses and wildlife, except the Table omits the Proposed Action. To guage the effect of these Alternatives the reviewer must turn to Table 8-68 which is the predicted influence

of each on the Challis Unit. If a value can be assigned to the predictions, over the long term, the Reduced Grazing Level Alternative produces the best results, and for that reason should be chosen to be applied.

Socio-Economic Conditions

It is conceivable that nowhere in the West, up to this time, have so many hours, days, and months been expended by hundreds of individuals in trying to find the fairest treatment to be given the 38 ranchers dependent in varying degrees upon the use of the forage resources of the Challis Unit. No amount of economic probing or theory will produce one additional stem of grass on the Unit. Neither will sympathy or sobbing over the impact upon cutbacks in grazing use for individual ranchers grow any more grass. Forces at work over many years have taken astronomical toll from the soil and vegetation. There is no easy, painless way to restore the losses. The evidence of loss is factual. It is going to take many years to recapture the loss. The most important thing to do now is to implement without delay the actions to reduce grazing, for which conditions on each allotment dictate the amount.

Sincerely,

Earl D. Sandvig

Earl D. Sandvig
Oregon Environmental Council

EDS:alh

Enclosure

AN ALLOTMENT MANAGEMENT PLAN
SAN FELIPE - ROCK CANYON ALLOTMENT - CHALLIS UNIT

To illustrate actual use of the data contained in the Final Environmental Impact Statement for the Challis Unit, it is necessary to prepare a plan from it. A compilation of basic, pertinent facts, collected from the EIS forms the support for this plan. It is designed to achieve the following results:

A - prevent progressive deterioration of the vegetative resource.
B - initiate an improving trend for vegetation.
C - provide improved habitat for resident fish.
D - improve terrestial wildlife habitat.
E - reduce soil loss by erosion.
F - provide improved grazing conditions for domestic livestock to enable permittees to continue productive operations.

FACTS

One grazing permittee - the Felipe Ranch. This ranch is dependent for 9.4% of its operation upon the forage it has obtained from the Allotment.

Acreage in the ALLotment 41,355, of which 38,900 in national resource land (BLM) and 2,304 is state land.

Grassland 5,856 acres, none of which is in good condition.

Sagebrush 23,751 acres, all except 1,140 acres is in fair to poor condition. 5,730 acres is in a down trend (deteriorating).

Wet meadow type 1,728 acres, all except 100 acres in down trend or not improving.

Mtn. mahogany type 2,080 acres rated to be in fair condition.

Conifer type 2,304 acres not classified.

Unsuitable range 5,616 acres. Assumed to be unsuitable for livestock grazing.

Soil A, 8782 acres, annual soil loss 2,744 tons.
Soil B, 8272 acres, annual soil loss 517 tons.
Soil C, 34.6 sq. mi, annual soil loss 5,889 tons.
Soil D, 3,29 " " , annual soil loss 3,956 tons.
Total --- 13,106 tons, 800 lbs. per acre.

Fish habitat - all seven streams in Allotment rated poor for fish habitat.

Growth development of key grass species:

Species	Start Growth	Boot Stage	Flowering	Seed Ripe
Bluebunch wheatgrass	4/1-4/30	5/15-5/25	5/20-6/30	6/15-8/1
Idaho fescue	4/1-5/10	5/20-6/1	6/1-7/15	6/20-8/10
Indian ricegrass	4/1-4/15	5/5-5/10	5/5-6/15	5/30-7/10

Rainfall ranges from seven to sixteen inches.

Elevation ranges from about 6000 feet above sea level to about 9000 feet.

Game animals - estimated numbers:

Deer 200 summer, 50 winter.
Antelope 200 yearlong, 300 winter.
Elk 25 - 50 winter.
Wildhorses 94 yearlong.

Present consumptive use of forage:

Livestock ---------- 3,287 AUMs
Wildlife ---------- 2,409 AUMs
Total --------- 5,696 AUMs

Estimated present available AUMs:

From Range Surveys --------- 3,735 AUMs
From SCS data (interpolated) 5,316 AUMs

An AUM is computed as 800 lbs. of forage that will sustain one cow, four deer, five antelope, one and one-half elk, five bighorn sheep. For example, in a period of one month , one cow will consume 800 lbs., four deer 800 lbs. etc. A horse will consume 1000 lbs. All animals will show preference for some plant species that must b adjusted to fit estimated overlapping use.

IMPORTANT PRINCIPLES TO BE PRACTICED IN MANAGING LAND FOR LIVESTOCK GRAZING

Too much early grazing is the most serious problem in range management.
Squaw Butte Experiment Station.

"... herbage production and grazing capacity during the season are reduced by early grazing". Hormay - Rest-Rotation Grazing.

"Studies of the effect of green leaf removal on grass vigor and survival, show conclusively that a grass will not remain vigorous and make full growth when more than one half of its green leaf surface is removed by each grazing or mowing.

TAKE HALF AND LEAVE HALF of the green top growth of your choice grasses, broad-leafed herbs and browse, if you want your range and pasture lands to produce all the nutritious forage they are capable of producing".
Soil Conservation Service

"The grazing of domestic livestock on the public lands should be consistent with the productivity of those lands". Public Land Law Review Commission.

THE ALLOTMENT PLAN

(1) The proper season of grazing.

To improve critically [illegible] deteriorated range, as is decribed for this Allotment, grazing should not begin before the key plants are in the flowering stage. According to the plant development records the flowering stage begins about June 1. However, 97% of the Allotment is in poor or fair condition, and 5,730 acres are in a downtrend (deteriorating). Serious loss of top soil is also reported. Hormay says, "The composition of vegetation on a given site is controlled mainly by the condition of the soil. Rate of improvement of the composition is determined by the degree of soil degradation and by the competition between existin and invading plants for occupancy of the site. Even under ideal management of grazin improvement of the range will be slow where the soil has eroded appreciably." [illegible] the condition the Allotment is in, and to provide the fullest opportunity for as rapid recovery of its potential productivity from all resources, a grazing season of one month, beginning August 15 and ending September 15, is provided for in this plan, effective for a period of five years. Because of the severe damage to soil and vegetation, recovery may take more than five years.

ESTIMATED PRODUCTIVITY IN AUMs OF THE ALLOTMENT

The following method was used by the BLM to obtain the number of AUMs produced in the Challis Unit:

"Soils data was obtained by utilizing data that was in the Columbia North Pacific Framework Study, the Idaho State Geology Map and about one week of field checking. The production capability of each soil was calculated by using the Soil Conservation Service range site information that was thought to be fairly representative of the Challis Unit but was gathered elsewhere in Eastern Idaho. This is the best information available at the present time. Without field testing, the accuracy of this data is impossible to predict.

Utilizing this data, present and potential vegetation production was calculated by estimating the production capability in total pounds of forage (of all vegetation) for each soil, vegetative type, and condition class (poor, fair, and good). Condition class was determined by using Bureau procedures in the watershed, conservation, and development system.

Total pounds of forage were converted to AUMs by dividing pounds of air dry forage by 800. Eight-hundred pounds of forage is considered equal to one AUM.

Present available AUMs were calculated by considering the palatability of vegetative species and reducing total production to leave enough vegetation for watershed protection. This estimated about one-third of total vegetation would be available for use by all animals. "

The method is considered inapplicable, since the data was not obtained on the Allotment, does not disclose the abundance or scarcity of the key species, the palatabilities for all of the species growing in the Allotment, and other data that is obtained by standard range survey procedures . Also the question as to how many AUMs are reserved for watershed protection is left unasnwered. Table 3-2 lists the present available AUMs for all animals as 5,316. To provide two thirds of the total vegetation for watershed protection will require 10,632 additional AUMs. Conversely, if 5,316 AUMs represents the total vegetation, taking two-thirds away for watershed protection leaves only 1,772 AUMs for the grazing of all animals Therefore, the data obtained from the Soil Conservation Service as described, is replaced by the data obtained from the range surveys made of the Allotment . These surveys made in 1951 and 1957 estimated the productivity of the Allotment to be 3,735 AUMs, which about equals the 6 Yr. average livestock grazing of 3,287 AUMs , but leaves only 448 AUMs to support wildlife and nothing for watershed protection. [illegible] for the livestock

Accordingly, if it is agreed that forage for wildlife (presently 2,409 AUMs) must be reserved before assigning forage (AUMs) to livestock, taking 2,409 AUMs from 3,735 AUMs leaves 1,326 AUMs for livestock and watershed protection. However, since forage productivity in AUMs is estimated and not precisely measured, a judgement is made in this plan that 1,000 AUMs can be assigned to livestock grazing in the San Felipe-Rock Canyon Allotment.

In comparison, BLM makes these alternative proposals for future livestock grazing

Proposal A --- authorize 1,534 AUMs plus wildlife = 3,943 AUMs
Proposal B --- authorize 2,453 AUMs plus wildlife = 4,862 AUMs
Proposal C --- authorize 3,387 AUMs plus wildlife = 5,796 AUMs

For obvious reasons, none of these proposals are acceptable, as all exceed the best available data on forage productivity for the Allotment.

REST-ROTATION SYSTEM OF GRAZING

This method or system for managing the vegetation in the Allotment was judged to be inapplicable for the reason the terrain and the size of the pastures do not meet the criteria for use of rest-rotation grazing.

Hormay says, "To practice rest-rotation grazing management itis necessary to divide the range into pastures or units. ....The pastures should be about equal in grazing capacity. ...On ranges with wide elevation differences, pastures should be laid out so about the same amount of low area is located in each."

The forage production in the Four Pasture System is as follows:

West Sage ------ 180 AUMs
East Sage ------ 187 AUMs
West Chile ----- 144 AUMs
East Chile ----- 129 AUMs

For the Three Pasture System proposed for the remainder of the Allotment the acreages are as follows:

Horse Basin Pasture ------- 13,303 acres
Bear Creek Pasture -------- 7,296 acres
Road Creek Pasture -------- 6,848 acres

The rest-rotation system places primary dependence for success upon (1) alternate no grazing (resting) of one pasture, and (2) using livestock to trample seed into the ground. Unless very substantial reductions are made in the number of animals to be grazed, the result is that the pastures that are to be grazed in the system will be seriously overgrazed to provide for the pasture that is to be rested (no grazing). Generally, the reductions the system requires for success are not made.

SOME FEATURES TO BE CONSIDERED IN PLANNING LIVESTOCK GRAZING FOR THE ALLOTMENT

The San Felipe-Rock Canyon Allotment is not a level piece of land. It contains an undetermined amount of land too steep to be grazed by cattle, or to be utilized to the same degree it would be if flat or level. There are seven small streams in the Allotment. All are rated poor for fish habitat. To restore fish habitat means reducing livestock grazing to allow riparian vegetation to be reestablished along streambanks, along with stabilizing the banks by the growth of grasses and grass-like plants.

The data discloses substantial erosion of top soil has taken place. Even under moderate grazing as specified in this plan, improvement will be very slow ,because of relatively low rainfall (seven to sixteen inches), short growing seasons, and the degree of degradation of the vegetation that is reported.

THE PLAN SUMMARIZED

1. Season of grazing ---------- August 15 to September 15, for a period of 5 years.
2. Authorize 1,000 AUMs for livestock grazing for a period of 5 years.
3. Reserve 2,409 AUMs for wildlife and wildhorses. Adjust the number of AUMs reserved as needed to provide adequate forage for increased grazing by wild animals.
4. Horse Basin, Road and Bear Creeks are all important for the production of resident fish. Seek practical method of preventing excessive use by cattle of the vegetation bordering those streams, short of fencing to protect the riparian vegetation.
5. At the end of five years make an appraisal of conditions to provide data for making changes in this plan.
6. Hopefully, in 20 to 30 years the six objectives, A through F, for which this plan is prepared will be achieved

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2/15/77

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COMMENTS ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL STATEMENT ON A REVISED RANGE MANAGEMENT PROGRAM FOR THE CHALLIS PLANNING UNIT

BY

The Natural Resources Defense Council, Inc.

Ada County Fish and Game League

Oregon Environmental Council

National Council of Public Land Users

Nevada Outdoor Recreation Association

October 2, 1978

Submitted by

Roger Beers

William R. Meiners

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I. INTRODUCTION

The Natural Resources Defense Council submits its comments on the Draft Supplemental Environmental Statement on a Revised Range Management Program for the Challis Planning Unit (hereinafter Draft Supplement). We believe that in many respects the Draft Supplement reflects an improvement in the BLM's development of proposals to mitigate the impacts of livestock grazing on the public lands, although there remain major gaps in the presentation of the analysis which should be remedied in the final version of this supplement.

For example, the BLM has for some time complained that it lacked basic resource data and was therefore greatly handicapped in its ability to make reliable projections of grazing capacity and the proper stocking rates necessary to improve the condition of the public lands. This Draft Supplement shows that the Bureau has expended substantial efforts in the collection of needed data regarding the Challis Planning Unit, and with proper analysis, it would appear that the BLM now has data adequate to form reliable judgments in dealing with many of the problems in the Challis unit. Much of this data is presented in useful summary form in the Draft Supplement. However, as noted below, some of the most crucial data and analysis has been omitted from this draft, and hsould be included in the final version.

Moreover, the specific recommendations for actions to mitigate the impact of livestock grazing in the unit are clearly and succinctly described. The Bureau has also properly switched the focus of review from the prior Challis EIS's. Both the draft and final EIS were exclusively concerned with the detailed presentation of grazing activity plans which largely continued pre-existing levels of grazing, without critical analysis of the basic land allocation decisions which were made. The Draft Supplement reflects the Bureau's recognition that these fundamental allocations must be addressed in the EIS and responds to public requests that the specific recommendations in the Management Framework Plan (MFP) for the unit be described in the EIS. Similarly, the alternatives considered in the Draft Supplement for the first time include a reasonable range of different approaches to management of the unit, and significantly different levels of livestock grazing. These changes greatly enhance the reviewer's understanding of the trade-offs, in general terms, between the various alternatives.

On the other hand, the Draft Supplement does not contain an adequate exposition of the reasoning and analysis which was used by the Bureau to arrive at the recommendations in the MFP, the conclusions concerning the grazing capacity of the area, the selection of proposed grazing systems to deal with the impacts of grazing, the projection of the impacts and benefits to be achieved over the long term by the implementation of these systems, and the derivation of alternatives and their projected benefits and impacts. Without this analysis, the lay reader and even the range scientist is left without the means of judging whether or not the BLM has in fact properly analyzed the problems at Challis. We do not assert that the BLM has failed to conduct the proper analysis of data in deriving its conclusions -- only that it has not been presented in the Draft Supplement. In our view, work on the final version of the supplement should be devoted primarily to correcting this deficiency.

Finally, our own review of conditions at Challis has long suggested a need for extensive reductions in the amount of livestock grazing allowed in the unit. The proposed 40 percent reduction in grazing in the unit proposed in the Draft Supplement thus reflects the first serious commitment by the Bureau to deal with serious over-grazing evident in the unit. In line with our comments above, every effort should be made in the preparation of the final supplement to ensure that the Bureau has adequately explained the justification for this desperately needed reduction.

The body of these comments will be devoted largely to our suggestions for improvement of the Draft Supplement in the preparation of the final version, but these criticisms of the draft, although important, should not obscure our other conclusions that in a number of respects the BLM has made marked improvements over the prior Challis EIS's. The major remaining deficiencies in this draft, as discussed hereinafter, are that (1) it fails to include the analysis by which basic decisions were made in the Management Framework Plan; (2) it fails to include some essential data and analysis necessary to be able to determine how the proposed action was selected and its projected benefits derived; and (3) it fails to provide similar data and analysis which will allow the reviewer to determine how alternatives were derived and their projected benefits selected.

II. THE DRAFT SUPPLEMENT FAILS TO SET FORTH CRUCIAL INFORMATION AND ANALYSIS WHICH WOULD EXPLAIN THE DECISIONS REACHED IN THE MANAGEMENT FRAMEWORK PLAN

The Challis Final EIS dealt with a proposal to implement allotment management plans ("AMP's") on sixteen allotments within the Challis Planning Unit. Challis Final EIS, p. 1. From the beginning, environmentalists, range scientists and other groups had urged the Bureau to describe and analyze in the EIS the basic land allocation decisions made in the Management Framework Plan for the Unit. The MFP is "the major document" in the planning system. It "establishes,

for a given area of land, land use allocations, coordination guidelines for multiple use, and objectives to be achieved for each class of land use." Challis Final EIS, p. I-25. According to the programmatic EIS on livestock grazing, the MFP is supposed to "identify and reconcile major land and resource use conflicts" and serve as a guide to all subsequent detailed activity plans, including specific livestock grazing management plans. BLM, Final Programmatic Environmental Impact Statement, Livestock Grazing Management on National Resource Lands (1974), p. I-2.

Numerous reviewers of the draft EIS agreed that the inclusion of the specific recommendations of the Challis MFP was essential and criticized its omission. See, e.g., Challis Final EIS, Appendix 4, p. 21, Comments of the Council on Agricultural Science & Technology on the Draft EIS at 11; Challis Final EIS, Appendix 4, p. 37, Comments of the Director, Office of Federal Affairs, Environmental Protection Agency, Region IX, on the Challis draft, at p. 1 of his "Specific Comments."

Indeed, pursuant to the BLM's planning system, even the AMP's considered in the Draft and Final Challis EIS were supposed to be based upon, and to follow, the MFP. This Draft Supplement reflects the Bureau's change in focus to the MFP to address these particular concerns. The Draft Supplement thus should not only describe the particular recommendations

in the MFP, but also expose the Bureau's reasoning and analysis in making the basic land use allocations and tradeoffs in this MFP process.

Table 1-4 in the Draft Supplement is obviously the Bureau's response to these criticisms, and it contains a useful summary of the recommendations in the MFP. However, this table does not satisfy criticisms also made that the BLM must set forth the underlying analysis which led it to make the MFP recommendations. Thus, William R. Meiners, a range consultant, noted in his Affidavit filed in NRDC v. Andrus, that each EIS --

> "must assess the degree to which the MFP has fulfilled its function, evaluate the data on which it was based and analyze its utility as the basic planning document."

As stated by the Friends of the Earth/Sierra Club:

> "Since one of the goals or objectives of the MFP is to decide whether grazing is a viable option, the EIS should evaluate the decision-making document to determine whether this land use plan is adequate." (emphasis added)

In view of the obvious importance of the MFP in the Bureau's planning system and its pivotal placement in the Challis Draft Supplement, we believe that the final version of the supplement must contain an evaluation of the adequacy of this land use plan for the Challis Planning Unit. This evaluation would require not only that the BLM set forth the specific recommendations which were the product of the MFP planning process, as the Bureau has done in Table 1-4, but

that it also present the underlying analysis which led to the MFP Step II recommendations, as well as the "resource tradeoffs," and some evaluation of the adequacy of this analysis.

As it now stands, the table has failed to accomplish this purpose, and none of the other references to the MFP in the Draft Supplement suffice. For example, the description of the MFP process in Appendices I-A and I-C is largely devoted to citations to the statutory authority underlying the use of the MFP process and the overall methodology, in very general terms, by which MFP's are developed. The underlying analysis and land use tradeoffs should clearly be set forth in substantially greater detail in the final supplement.

III. THE DRAFT SUPPLEMENT FAILS TO SET FORTH THE REASONING AND SOME CRUCIAL DATA BY WHICH THE PROPOSED ACTION AND ITS PROJECTED CONSEQUENCES WERE DERIVED

The same deficiency noted above also underlies the Bureau's exposition of the proposed action and the projected benefits of that action. There is no explanation of how it or its projected impacts or benefits were specifically derived, and no rationale presented for its selection as the "proposed action or preferred alternative," in comparison to other alternatives.

To be adequate, grazing statements, including the Challis EIS, must substantiate the predicted environmental benefits with which they deal. According to the BLM, the

statements must "show that the proposed grazing systems would accomplish the stated objectives and range improvements would result." Affidavit of Paul D. Leonard, filed by the federal defendants in NRDC v. Andrus, January 10, 1978, ¶ 16. To fulfill this objective, these statements must not only demonstrate that the BLM possesses the information needed to allow predictions to be made, but they also must utilize that information in an objective manner to demonstrate that the predicted results are likely to occur. OEPR, Third Field Review - Challis FES, p. 3; OEPR, First Field Review - Challis FES, p. 4.

The final Challis EIS, like the draft, predicted that implementation of the proposed management plans would result in overall improvement in the currently degraded resource conditions. Both documents predicted that highly specific and precise improvements in particular resource conditions would occur. Neither document substantiated these predictions, however.

Numerous reviewers pointed out that the draft failed to present the kinds of information and analyses required to substantiate such predictions. NRDC, for example, pointed out that the impact analyses in the draft EIS ignored evidence suggesting that the predicted results were unlikely to occur, as well as the availability of measures to minimize obviously avoidable adverse impacts of proposed actions. NRDC's Comments, pp. 29-35. The representative of the Office of Environmental

Project Review reviewed the proposed final and stated that "The beneficial effects claimed for the proposed program are unsubstantiated by any explicit evaluation." OEPR, First Field Review - Challis FES, p. 3.

The Draft Supplement does contain additional useful data which was lacking in the draft and final Challis EIS's. However, data which the BLM states has been gathered is omitted from the EIS which is essential to the evaluation of the Bureau's ultimate conclusions, and equally important, the Bureau has failed to set forth in the Draft Supplement its underlying analysis which would provide the link between the data presented and the selection of particular grazing systems, and their projected benefits. In particular, the Draft Supplement suffers from the following deficiencies in this regard:

(1) It describes particular grazing systems which will be imposed, without setting forth in proper detail the reasons for the selection of one grazing system over another and without any analysis provided to justify the predicted benefits of those systems.

(2) The EIS describes particular range improvements that will be imposed, again without any assessment presented that constituted the Bureau's reasoning in developing and planning these improvements, beyond the statement that they were necessary to implement the range management plan.

(3) The EIS proposes a reduction in the wild horse herd, without any analysis presented as to how the proposed herd size was determined. For example, no exposition was provided as to whether the size was predicated upon the limitation of winter range, competition with other ungulates, resource damage, or the interaction of the proposed herd size with other objectives set forth in the EIS.

(4) The EIS states that it will accommodate the Idaho Fish and Game Department's projected wildlife plan, without any assessment as to whether this is a realistic projection and any analyses of the interaction of implementing this projected plan with other goals and objectives developed through the MFP process.

(5) The Draft Supplement concedes that it will not substantially enhance fishery values. However, it provides no analysis of whether measures exist to better enhance the aquatic environment and why a proposed action was selected which was acknowledged to have little beneficial effect upon this significant natural resource.

(6) The EIS does not include any assessment of the cost of implementation and maintenance of the proposed action and thus provides no basis for review of the important question of whether the proposal is practicable and achieveable in comparison with other courses of action.

(7) The EIS does not present any comprehensive social and economic analysis which would apply to all public values.

We again emphasize that the Draft Supplement is improved in its presentation of the proposed action and alternatives; it shows that the Bureau has gathered the information necessary to make proper judgments about the basic land use allocations involved; and that it has taken the right step in proposing substantial reductions of grazing in the area. We do not believe, however, that its reasoning and analysis have been set forth in sufficient detail, and this should be corrected in the final. Some of these deficiencies are dealt with in more detail below.

1. The Selection of Grazing Systems

Unquestionably, a variety of discrete, alternative actions exist which could be taken by the BLM to improve the current management of livestock grazing and degraded resource conditions in the Challis Planning Unit and elsewhere. Clearly, the BLM should not ask readers to assume that the proposed management systems were properly arrived at during the formulation of the proposed action. As the OEPR's representative has noted:

> "A grazing system is directly related to the grazing capacity it is designed to protect and manage. Establishing a proper relationship between the grazing plan and site capacity is essential." OEPR, Review of Sandy DES, p. 2.

Consequently, the Challis EIS, to be adequate, must set forth the criteria utilized for selection of management systems, and their application, as well as comparative data and analyses, to the resources of the proposed grazing areas. See, e.g.,

Challis EIS, Appendix 4, p. 20, Professor Anderson's Comments; Memorandum to Director, Office of Environmental Project Review, from John H. Farrell, Subject: "Challis Grazing Unit FES - Second Field Review, Denver, Colo. (BLM)" (Nov. 3, 1976), pp. 1-2. The representative of the Office of Environmental Project Review reviewed the proposed final EIS and found that it failed to provide any "scientific basis" for the "highly complex and controversial management system" proposed. OEPR, Second Field Review - Challis FES, p. 1

The specific management plans proposed for the Challis Unit in the Draft Supplement contemplate the implementation of one particular management system, rest-rotation grazing, for over two-thirds of the public lands in the Challis Unit. Draft Supplement I-10. Numerous reviewers of the draft EIS, including many range professionals, as well as NRDC, were critical of the BLM's reliance on that system for the Challis area, as well as its superficial analysis of the system in the environmental statement.

For example, the Director of the Fish and Game Department stated:

> "If range improvements in these areas are going to be made they should not be initiated through a rest rotation program as it is not a panacea for the restoration of already depleted wildlife browse species." Challis Final EIS, Appendix 4, p. 79 (p. 16 of his comments).

Similarly, the comments of the Council on Agricultural Science and Technology said:

> "Rest-rotation grazing has seemingly been adopted without thorough consideration of the advantages and disadvantages ... Rest rotation is unfortunately not a panaces to all grazing problems. In the long run, use of this system may be highly detrimental to both the range livestock industry and the condition of the range ..." Id., p. 20 (at p. 4 of their comments).

Professor Anderson of the Department of Biology, Idaho State University, pointed out that the draft contained

> "No citations to studies that would support the large scale implementation of rest-rotation grazing systems on bunchgrass-dominated steppe communities ... no discussion of previous experiences or trials of rest-rotation systems with the habitat types involved. Documented trials and a discussion of these in relation to the Challis [plant] community types must be included in the EIS. Not only is the proposed system a drastic departure from current practice in the area, but it also represents the large-scale application of an approach that has not been proven as an effective management scheme for intermountain or montane rangelands." Id. at 70 (Enclosure 1 of his comments).

Similarly, many reviewers criticized the draft for failing to substantiate the major premise of rest-rotation.

The 40 percent reduction in livestock grazing within the unit, proposed in the Draft Supplement, will unquestionably have a beneficial impact upon the condition of the public lands in the unit. However, no specific assessment is made of the particular grazing systems, primarily rest-rotation, which will be utilized for remaining cattle allowed to graze on specific land areas and the effects therefore upon the terrestrial and aquatic environments. For example, there

is no comparison among the various systems and alternatives in their effects upon cows, horses, deer, elk, sheep, fish, etc., or watershed attributes and values of the impacted area. The final version of the supplement must include this analysis so that reviewers will be able to judge whether the appropriate system among a number of management systems has been selected or whether this general approach is preferable to more extensive reductions of use.

2. Range Improvements

Similarly, more assessment is required of the rationale for the implementation of range improvements and their projected impact. The Draft Supplement states that "the proposed range improvement projects are necessary to implement the proposed grazing system." Appendix I-C, p. A-8. Beyond this conclusionary statement, however, little analysis is presented in the Draft Supplement as to why a particular practice is necessary and how its implementation will specifically benefit or accelerate achieving the management goals and objectives. For example, of particular concern are water developments. Often such developments are proposed and implemented without sufficient consideration of wildlife habitat requirements or values. Pipelines may be introduced into areas which have critical wildlife habitat values for certain species, and these values may be effectively destroyed or reduced by the intrusion and competition of livestock enabled by the development. Within the Challis Planning Unit, the

Draft Supplement proposes 44.5 miles of pipeline. Unfortunately the locations of this pipeline are not related to any analysis of its impact on affected wildlife species.

3. Cost of Implementing the Proposed Actions

Nowhere in the Draft Supplement is there any discussion about the cost of implementing the proposed action or any of the alternatives. A rough estimate of the proposed action, utilizing the Table 1-7 as a basis for the projection, might look like this:

54.1 miles fence at $2000/mile		$108,200
51 springs at $2000/spring		102,000
44.5 miles pipeline at $3000/mile		133,500
21,975 acres of brush beating at $5/acre		190,750
1,310 acres plow/seed at $9/acre		11,790
1,000 acres of burning at $3/acre		3,000
	Subtotal	$468,365
8 permanent positions, additional manpower at $20,000/year		$160,000
	Total	$628,365

Thus, a rough estimate suggests that the proposed action would require an approximate investment of 3/4 million dollars with an annual maintenance cost thereafter approaching 1/4 million dollars. If this sort of analysis had been prepared for each of the alternatives and the proposed action, it would have allowed judgments to be made about whether or

not particular livestock operations were marginal, in view of the public cost required to sustain said operations, as well as providing a basis for some conclusions about the practicability of achieving the objectives set forth by implementation of this particular proposal.

4. Vegetation

The Draft Supplement (p. 1-1) states that the former BLM Director concluded, after reviewing the Final Challis EIS, that there was " ... the need for additional soil and vegetation data and preparation of a supplemental using the new data." In Appendix 2-A (p. A-10), the Draft Supplement states that an ecological site and condition inventory was conducted in the summer of 1977 in the Challis Unit following the guidelines set forth in the SCS National Range Handbook (1976). Further, a third order soil survey was completed in 1977 by the SCS with soils classified to the series and phase of series level. The Draft Supplement does not provide sufficient explanation as to how these data were used in deriving the conclusions set forth in the document.

Soils

A Soil Association Map (Map 2-5) and Summary of Soil Characteristics (Table 2-11, pp. 2-18 through 2-21) are presented, and they include useful information. However, nothing is done with this data. It is not correlated to the respective range sites mapped within the Challis Unit.

Instead, some attempt is made at correlation to vegetative type (Table 2-12, p. 2-22). If the vegetative type listed represented the potential plant community associated with each range site a correlation could exist. However, it is impossible for the reviewer to correlate given vegetative types with applicable range sites in any meaningful way.

Range or Ecological Sites

No range site map is presented in the Draft Supplement, nor is any tabulation of range site characteristics made for the Challis Unit. Omission of this basic data is critical. Condition class ratings and trend projections have little basis in fact unless predicated upon ecological site delineations and characteristics. The "state of health" or composition by weight of the kinds of plants growing on each site determines its condition class. Apparent trend determinations are more complex and must use such additional criteria as seedlings, plant vigor, erosion, etc., and must be measured over time to achieve reliable results. Range sites are essential to this determination since not all sites react the same, and are dependent upon the particular soil and climactic characteristics of each. The Draft Supplement states that "Compilation of the inventory data involved portraying on maps the soil survey, ecological sites, and ecological condition class." (p. A-10). This information should be presented in the final version of the supplement.

Vegetative Types

The current vegetative types that were used (p. A-10) to portray the vegetative resources do not provide sufficient indications of basic resource characteristics; nor do they provide the means to project condition class improvement or productive potential. The exception is that rare instance where the current vegetative cover actually is the potential plant community associated with a specific range or ecological site. Within the Challis Planning Unit the likelihood of this occurrence is rare or, if found, not extensive.

As potential plant communities deteriorate from excellent to good, fair or poor condition, they often become more diverse as less dominant species and opportunistic (invader) species assert dominance or move in. As poor condition class becomes more prevalent a greater uniformity of plant cover and/or bare ground occurs since only those plant species which are immune to disturbance will survive. This varies according to disturbance pressure and inherent soil/climatic (ecological or range site) characteristics. It is not uncommon to find essentially the same "current vegetative type" spread across thousands of acres in a way that superficially masks differential soil/site characteristics. Hence, to portray the in-hand inventory data at Challis on such a base is to ignore basic soil/site resource data.

BLM claims that vegetative types are used to stratify each condition class and that "Acreages were tabulated for the various ecological sites, condition class, and current vegetation types within a condition class" (p. A-11). The material presented in Chapter 2 does not demonstrate this, however, and this should be corrected in the final version.

Additional problems exist in the presentation of the vegetative data, per se, and the determination of animal unit months. A discrepancy exists between the names used in Table 2-1 (p. 2-3) and those used in Table 2-2 (p. 2-4) and Table 2-12 (p. 2-22). In all events, it is impossible to correlate these names and the descriptions of associated species and/or soils to the Ecological Site Guides utilized in the conduct of resource inventories.

Finally, there is an unexplained difference in the animal unit month calculations between Tables 2-1 and 2-2. Table 2-1 shows a total of "AUM's Available for Livestock" of 10,436. Table 2-2, by addition of all AUM's by vegetative type, condition class and allotment, provides a total of 6,846, as indicative of the total AUM production of the Challis Unit, not just those available for livestock. Table 2-3 (p. 2-5) shows present total AUM's by allotment for spring and summer use at 30,297 and 34,617 respectively. When all of these various figures are compared to the proposed use listed in Table 1-2 (p. 1-2), one must question how such amounts were calculated, why they do not agree, and how

they relate to actual inventory data.

5. Socio-Economics

This section of the Draft Supplement is unacceptable in its present form. It deals only with the livestock industry and essentially this input to the local economy. Wildlife, both fish and game, recreation, archaeology, and other values are described in detail in the text but are ignored in the Socio-Economic analysis. This section should reflect all values to all publics.

IV. THE EIS FAILS TO PRESENT THE ANALYSIS UNDERLYING THE PROJECTED BENEFITS AND IMPACTS OF ALTERNATIVES

The same deficiencies which are evident in the EIS in its description of the proposed action and its proposed benefits are equally true of the EIS's treatment of alternatives. While the Draft Supplement represents a decided improvement in the prior EIS's by its inclusion of alternatives which represent, both in levels of grazing and in conceptual goals, a variety of different approaches, nevertheless one is left without sufficient means of determining whether these alternatives were derived in the proper fashion, and how the proposed action came to be preferred over other alternatives.

For example, under Table 8-68, apart from the no-grazing alternative, the one alternative presented which shows a projection of consistently better vegetative conditions, trend condition, improved wildlife habitat conditions, and indeed the only one which shows an increase in annual net income within the Challis Unit to the ranching community

after 15 years, is the "wildlife maximized" alternative. While that alternative projects an increase in annual net income within the Challis Unit after 15 years of 136,458 dollars over the proposed action, it would require a short term reduction in such income of only 26,000 dollars more than the proposed action. One is left, therefore, without any explanation or analysis anywhere in the document which would describe, in these circumstances, why the Bureau has selected another alternative for the "proposed action."

Glossary

GLOSSARY

Association, soil. A group of soils geographically associated in a characteristic repeating pattern.

Complex, soil. A mapping unit consisting of different kinds of soils that occur in such small areas or in such an intricate pattern that they cannot be shown separately at the map scale being used.

Consociation, soil. A mapping unit consisting of one major soil with a few minor inclusions of other soils.

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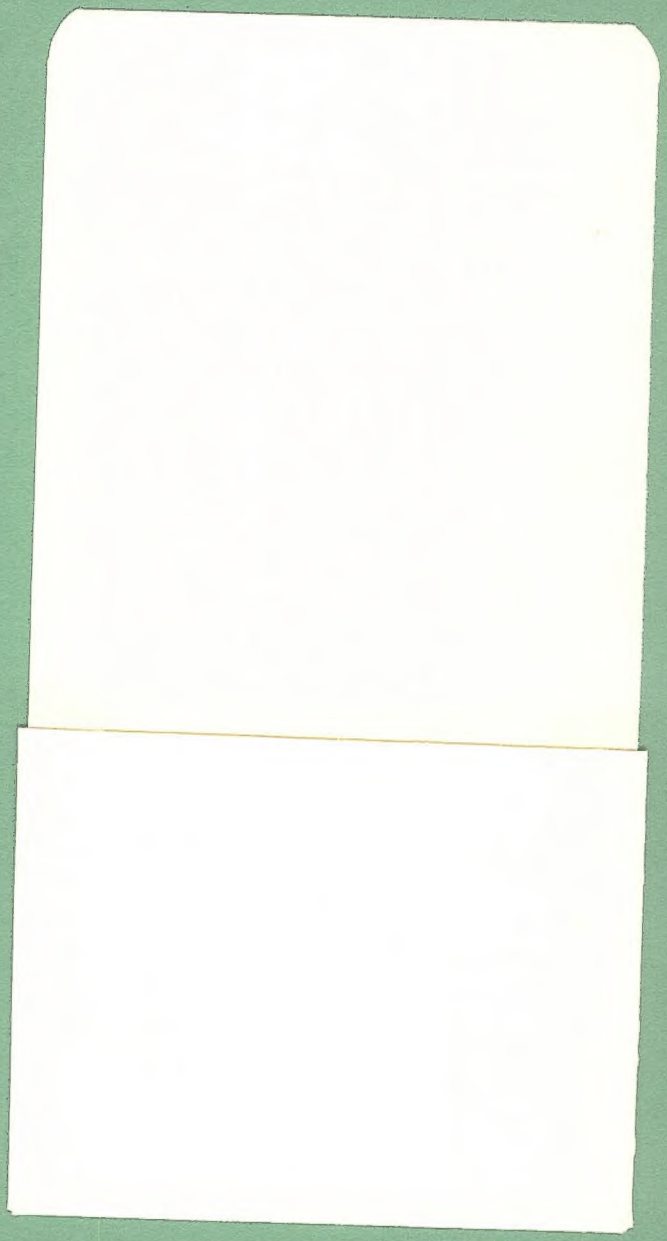
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